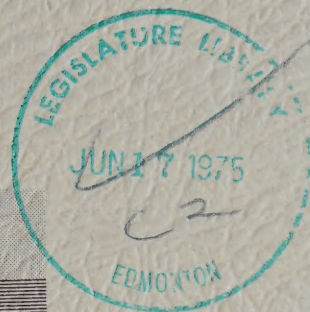


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SOCIOLOGICAL EVALUATION OF THE RED DEER RIVER FLOW REGULATION PROPOSAL

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RED DEER RIVER FLOW REGULATION PROPOSALS

Department of the Environment

Mr. A. J. Burke, P. Eng.
Minister
Department of the Environment
100 St. St.
Edmonton, Alberta

Dear Sir:

We have the pleasure in submitting to you this report entitled, "Sociological Aspects of the Red Deer River Flow Regulation Proposal." The purpose of this report is to examine the sociological aspects of the proposal and to provide information on the Red Deer River.

Sociological Studies

We wish to thank you for the cooperation of the companies involved from Mr. A. J. Burke and Mr. A. J. Burke of the Department of the Environment who were helpful during our visit.

by

Dhara S. Gill
4815-114B St.
Edmonton, Alberta

Daryll G. Murri
16 Glenbrook Blvd.
Sherwood Park, Alberta

December 1974

January 31, 1975

Hon. W. J. Yurko, P. Eng.
Minister
Department of the Environment
10040 - 104 St.
Edmonton, Alberta

Dear Sir:

We have the pleasure in submitting to you this report entitled, "Sociological Evaluation of the Red Deer River Flow Regulation Proposal." The purpose of this report is to examine the comparative sociological impact of the proposed dam at Site Six or Site Seven on the Red Deer River.

We wish to place on record our appreciation of the cooperation received from Mr. A. F. Belyea and Mr. A. T. McPhail of the Department of the Environment and their colleagues during our work.

Respectfully yours,

Dhara S. Gill
Sociological Consultant

Daryll G. Murri
Sociological Consultant

Enc.

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SYNOPSIS

This study presents sociological evaluations of the Red Deer River Flow Regulation Proposals. Specifically, the comparative impact of proposed Dam Site Six and Dam Site Seven are assessed. Three levels of data are presented. The study begins with an analysis of the population of the River Basin. This is followed by an economic base analysis of the same area. A sociological study of a smaller area, called the "Immediate Area", is then presented. The final sections provide information concerning the families to be affected at the two dam sites. Various sources of data for the area, such as published reports, personal interviews, questionnaires and observations, were utilized.

The construction of a dam on the Red Deer River would affect the population and the economic development of the area. While specific changes would occur in the area where the dam was located, the overall effects on the total area would be the same regardless of the site selected.

Population projections for the River Basin area indicate that the area will experience growth. The projections ranged from a low of 157,872 to a high of 226,196. The potential industrial development of the area was examined. This area has many resources which would make it an attractive area for development. Furthermore, citizens from the area have expressed a need for industrialization. Job opportunities and better services provided through industrialization are viewed by the residents as major factors associated with the construction of a dam. An examination of the economic base of the area suggests that the development might result in the creation of more basic job opportunities in the area. This would have an overall effect of creating new non-basic jobs and encouraging population growth.

Sociological aspects of rural life in the "Immediate Area" provide sociological data on the service centers of Innisfail, Bowden, Olds, Sundre, Caroline and Spruce View. In addition, the neighborhoods of Tindstoll, Markerville, Raven, Kevisville, James River Bridge, Cottonwood and Little Red Deer and the hamlet of Dixon are identified and sociologically described. These neighborhoods are of a homogeneous nature sociologically. They provide services and fulfill needs to varying degrees. It is expected that development of the proposed facilities will increase pressure on land for non-agricultural purposes, will cause the population of the area to become more heterogeneous, and will bring about increased differentiation of service centers, communities, services and institutions. The intensity of influence will vary according to the proximity of a given sociological unit to the dam site development.

Throughout the study period a Public Advisory Committee functioned to provide public inputs into the study. An examination of their role in this project suggests some possibilities for future public participation programs. Suggestions for public participation work subsequent to the completion of studies include a systematic provision of information to the families, communities and the public at large through a three-step process detailed in the report.

In evaluating the alternative dam sites, we found that if a dam is built at Site Six, 25 properties will be affected. The flooding caused by a reservoir at 3,110 feet will involve two or three home sites and a total of 4,230 acres of land. The Site Seven proposal will flood about 15 home sites, a burial ground, and the present site of Raven. It will affect 59 properties flooding a total of 6,315 acres of land. Also, there will be considerable dislocation of farm families, service facilities, and social interaction patterns. There may also be other problems such as drainage difficulties on unflooded

land. The local residents view the development at Site Seven as having more negative sociological impact than development at Site Six, considering the nature of the benefits. Of the alternative dam sites, our evaluations tend to agree with the above observation.

In case of displacement of certain farm families as a result of the proposed developments, the report suggests measures considered necessary to minimize the negative impact of the relocation-compensation process.

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The consultants wish to record their appreciation of the guidance and help received throughout the period of study from Mr. Frank Belyea, Chairman of the Sociological Subcommittee, and Mr. A. T. McPhail, Project Leader of the Red Deer River Flow Regulation Studies, and their assistants, Mr. David Anderson and Mr. S. Park Powell. The contributions of Mr. Roger Lefrancois during the Committee meetings are also recognized.

The consultants also wish to express their appreciation to the residents of the immediate area who supplied a large part of the data and provided tremendous cooperation throughout the data collection phase of the study. Various people in the entire area were interviewed and their cooperation and help must be placed on record. Mr. W. Shaw of the Red Deer Regional Planning Commission was very interested in the study and the consultants benefitted from exchanges with him.

INTRODUCTION

The ultimate aim of all planning, including planning for resource development, is the betterment of the human condition. In order to be of relevance, resource development planning must take into account the human beings and their institutions within the area to be developed. Also, interrelations and interactions between the area to be developed and other larger units must be considered. Furthermore, if resource development projects are to achieve their potential and success, mechanisms enabling involvement of individuals and groups in the planning and development process of these projects must be provided.

Recently, there has been a growing awareness on the part of planners regarding the need for sociological input in the planning process of resource development projects. Along with other resource related studies, this need was well recognized in planning the preliminary studies for the Red Deer River Flow Regulation Project. Definite provisions were made to study sociological aspects and the potential social impact of this project.

This study, therefore, concerns itself with providing information on the social impact of the proposed developments. Specifically, this study endeavors to understand the demographic aspects, trends and implications in the general area of study. It also gives data on the economic base. Sociological groupings in the immediate area are examined along with the anticipated impact of the proposed development on the neighborhood and community systems. Some attention is given to institutional patterns as well as to future impacts and other sociological variables in view of the proposed developments. More specific data obtained from families at Sites Six and Seven (Raven Site) are presented along with

possible implications of the proposed dam on these families. In addition, certain measures have been suggested in order to minimize the negative impact of the proposed developments on individuals, families and communities.

This study is part of an overall study of the areas around Site Six and Site Seven on the Red Deer River. Other subjects of the study are the engineering aspects, hydrology, fish and wildlife, recreation, archeology, etc. The contracts for these studies were distributed in March, 1974. The objectives of the sociological studies as outlined in the original contract were: (1) to assess the potential sociological impact and implications of the Red Deer River Flow Regulation Proposal on the basis of studies involving spatial considerations, community systems, population characteristics, institutions, social processes and other social factors; (2) to obtain an assessment of opinions, attitudes and plans of the area people with regard to the development opportunities along the river as a result of the expected reservoir; and (3) to evaluate the effectiveness of the process used to facilitate involvement of individuals from the area in the planning process.

The consultants commenced their work immediately upon signing the contracts. The data collection phase continued throughout the summer. The results of various parts of the study were compiled during the months of September and October and the reports were written and finalized in December, 1974.

Throughout the period of study a close liaison was maintained with the Sociological Subcommittee (see Appendix A) of the Technical Advisory Committee which monitored the various studies. The Sociological Subcommittee met with the consultants to review progress and to give suggestions for the type of data considered desirable. In addition, the consultants reported to the Technical Advisory Committee. It was specified in the contract that the various consultants involved in the studies on the Red Deer River Flow Regulation studies coordinate

with each other and maintain a liaison on matters of mutual concern and interest. The consultants involved in the sociological studies maintained such a liaison with those consultants where mutual interrelationships were identified. In addition, the consultants cooperated and helped the Red Deer Regional Planning Commission with their summer 1974 study.

Organization of the Report

The report starts with an analysis of the demographic data of the river basin. The data are presented according to various administrative divisions in the area and according to age and sex categories. Projections and trends in population have been pointed out for the significant areas and communities. Overall projections are presented at the end of this section. The second section presents an economic base study of the area. Within this section the economic impact of possible future industrial development is examined. Examination of sociological grouping follows, along with some descriptive data on institutional patterns, leadership situation, and community and government services. These data are presented for a smaller unit, defined as the "immediate area", around the potential development Sites Six and Seven. Next, the impacts of a possible development at either Site Six or at Site Seven are qualitatively assessed. This is limited to the possible dam sites and presents some data on the families which might be directly affected in the event of a major development either at Site Six or Site Seven. The section ends with some suggestions for compensation and rehabilitation of the possibly affected families.

The last section of this report examines data regarding the structure of public participation in the program. Attitudes and opinions of the present Public Advisory Committee members are examined with regards to the role of public participation in development projects. The structure

of the Public Advisory Committee is compared with an analytical model designed to evaluate public participation programs.

Population



POPULATION

Introduction

The population of an area can be greatly affected by development. The construction of a dam on the Red Deer River would have many effects upon the population of the area. The first and most noticeable effects would be upon development of housing and services for the construction workers building the dam. The dam would likely bring about conditions which would attract industry thereby leading to the growth of population in the area.

Methods of Study

In the study we are investigating the areas most likely to be affected by the construction of a dam on the Red Deer River at one of the designated sites (Six or Seven). Utilizing census data, the total population of the area was determined. In the presentation of the population data, the total population was broken down into its component parts, (cities, towns, villages and residual). An age-sex analysis was made for each of these categories for 1971. Certain of the age groups (25 to 34, 35 to 44, 45 to 54, and 55 to 64) had data for ten year age groupings. It was assumed that the distribution of individuals was equal for all ages within these groupings. The groups were therefore divided into two five-year groups for population pyramid analysis. In cases with odd numbered data, the value was assigned to the younger age group.

Population projections were made using linear and log regression techniques. Projections based on an assumed change in the economic base were also made.

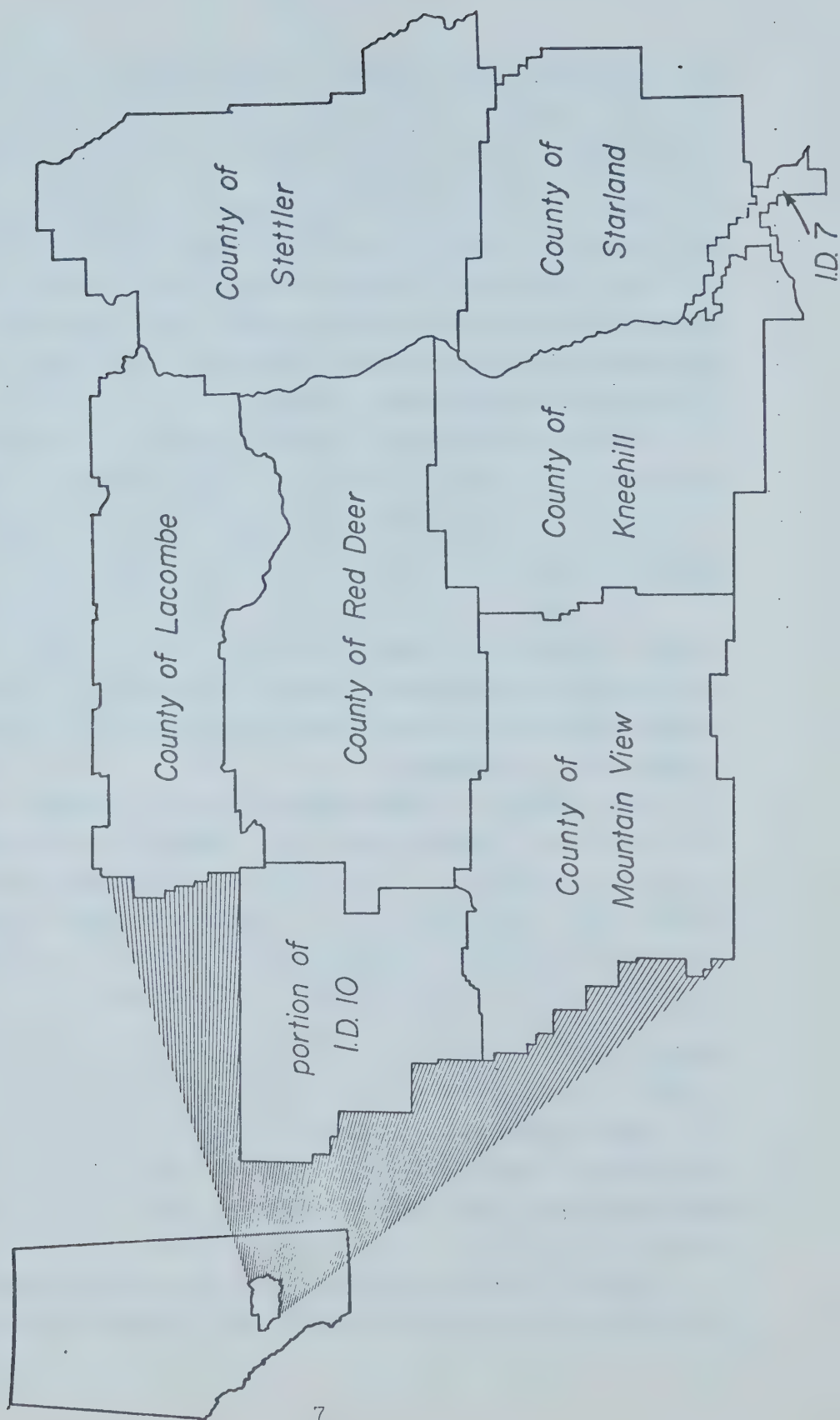
Total Region Under Study

The total region under study includes Lacombe County (Number 4), Stettler County (Number 6), Mountain View County (Number 17), Red Deer County (Number 23), Kneehill Municipal District (Number 48), Starland Municipal District (Number 47), part of Improvement District Number 10 and Improvement District Number 7. (See Figure 1.) This entire area had a population of 109,925 in 1971. This is the population for which age and sex data are available. From the distribution of ages and sex it can be seen that the population is relatively stable. The 0-4 age group is small, along with the 20-24 age group. This indicates, first, that young adults must leave the region for education or work. A small 0-4 age group indicates that there are fewer children in the area. Only about 6 percent of the entire population is 70 years of age and over.

Red Deer County Number 23 contributes 41.97 percent of the population of the whole region. This, in turn, can be attributed to the City of Red Deer. Future growth is anticipated for Red Deer, hence the whole region will grow also. The County is bountiful in natural resources (coal, cement, clay, sand/gravel, natural gas and timber) and is an area of prosperous mixed farming.

Mountain View County Number 17 contributes 14.24 percent of the total population. It is the region's second largest population contributor. In general, this county's population is very young. There is a large school-age population and a relatively small percentage of people over 65. Both Olds and Sundre are growth centers in the county. The county is rich in natural resources (sulphur, cement, clay, sand/gravel, petroleum and natural gas and forests). It also is an area of mixed farming. The vast foothill forest reserves are just 18 miles west of Sundre, hence recreation is an important industry.

Figure 1
Study Area



Lacombe County Number 14 contributes 13.60 percent of the total region's population. Its population has remained relatively stable over the years and evidence indicates that it is an aging population. It is largely a mixed farming area although it does have commercial deposits of coal, sulphur, sand/gravel, petroleum and natural gas.

Stettler County Number 6 contributes 8.96 percent of the total population of the region. Its population has remained stable and future growth does not seem too likely. It too is based on mixed farming.

Kneehill Municipal District Number 47 contributes 8.13 percent of the total population. Its growth has remained stable and future growth seems unlikely. The communities located within have aging populations and their main functions are as residential and retirement centers.

Starland Municipal District Number 47 contributes only 2.62 percent of the total population. Its population has been on the decline for the past two decades. The small communities within are remaining fairly static as their populations are aging.

The segment of Improvement District Number 10 included in this report contributes 3.84 percent of the total region's population. Its population has remained relatively stable over the years. It is largely an agricultural area. The natural beauty of the area could lead to its development as a recreational area within the province.

Improvement District Number 7 contains the city of Drumheller. Drumheller is a growth center in the area and serves the needs of much of the surrounding area. The area has tremendous natural resources and recreational potential. Many of the smaller communities in the Improvement District have declined due to past shifts in the economic base of the area.

Thus, as can be seen, the two municipal districts of Kneehill and Starland and the part of Improvement District

Number 10 plus Stettler and Lacombe Counties will not likely contribute much to future growth in this region. Their populations are aging. This is because the bulk of the population is rural. The actual number of farm people is declining every year. Since the farm population is declining, the small communities that function as trade, shopping and education centers for the farm area will decline or remain static. This is exactly what is happening in these areas.

Red Deer County, Mountain View County and Improvement District Number 7 are prospering. Red Deer and Drumheller are industrial and trade centers for the region. Recreation and industry are important in Mountain View County.

Table 1 indicates the population changes in the study area from 1951 to 1971. Residential patterns are also indicated. The population grew by 6,052 from 1951 to 1956, 14,505 from 1956 to 1961, 5,115 from 1961 to 1966, and 1,571 from 1966 to 1971. For all practical purposes, the last growth figure of 314 persons per year is negligible.

Changes in the place of residence of the population were significant. In 1951, only 9.2 percent of the area's population lived in the City of Red Deer; by 1971, this had increased to 25.2 percent. However, from 1966 to 1971 the population of Red Deer increased only by 1,504.

Careful analysis indicates that Red Deer, Drumheller, and towns of the area are growing while the villages and remaining farm and non-farm segments of the population are declining.

An examination of the age/sex structure of the region's population indicates that part of the growth of the towns results from their function as retirement centers. The population 70 and over accounts for 6.09 percent of the area's population, 5.48 percent of the area's city population, 9.67 percent of the towns' population, 8.58 percent of the villages' population, and 4.53 percent of the residual population. The younger age groups show a decline which

Table 1
Population of the Study Area*

Places	1951**	1956**	1961	1966	1971
Cities	10,176	14,970	22,543	29,745	33,120
Towns	12,758	15,913	18,265	20,011	21,460
Villages	5,347	5,948	7,128	7,500	7,280
Residual	54,401	51,903	55,303	51,098	48,065
Total	82,682	88,734	103,239	108,354	109,925

*Lacombe County No. 14; Red Deer County No. 23; Mountain View County No. 17; Stettler County No. 6; Starland Municipal District No. 47; Kneehill Municipal District No. 48; Improvement District No. 7; and part of Improvement District No. 10.

**For 1951 and 1956 information was not available for the segment of Improvement District No. 10 used in this study. In 1961, 1966 and 1971 this segment contributed 3,821, 3,558, and 4,220, respectively in population.

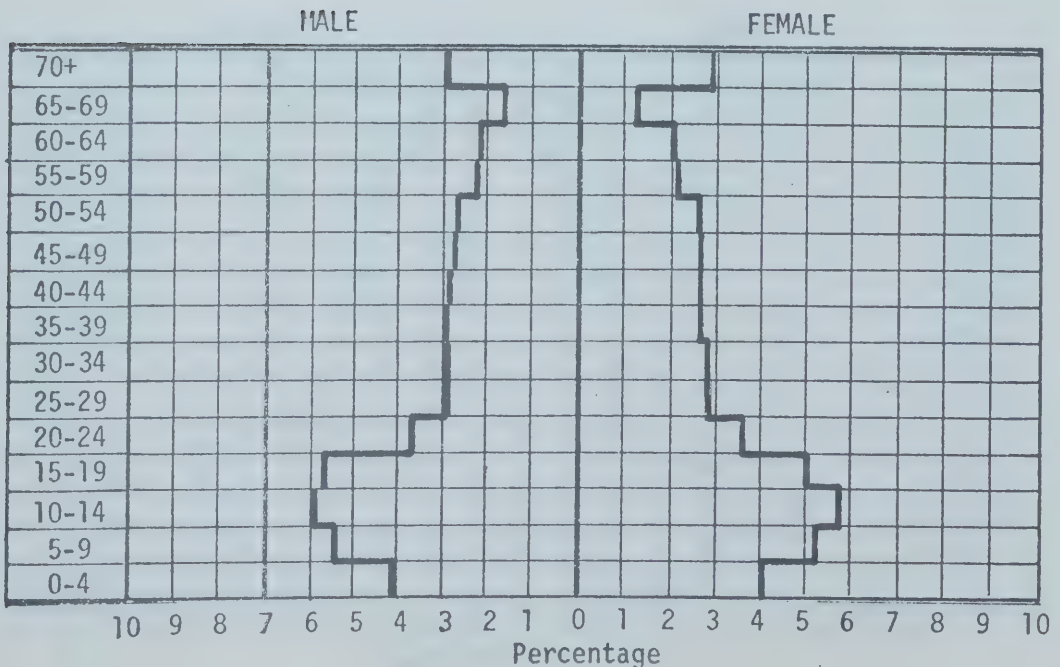
Table 2

Population of Study Area (Total, Cities, Towns,
Villages, and Residual)

Population of .STUDY AREA TOTAL.....,71... (year)

Age	Male	Percent	Female	Percent
70+	2880	2.93	2840	2.89
65-69	1640	1.67	1320	1.34
60-64	2217	2.25	2051	2.08
55-59	2233	2.27	2069	2.10
50-54	2663	2.71	2655	2.70
45-49	2677	2.72	2675	2.72
40-44	2827	2.87	2677	2.72
35-39	2843	2.89	2693	2.74
30-34	2827	2.87	2843	2.89
25-29	2843	2.89	2862	2.91
20-24	3615	3.67	3470	3.53
15-19	5625	5.72	5050	5.13
10-14	5845	5.94	5760	5.85
5-9	5365	5.45	5205	5.29
0-4	4155	4.22	3985	4.05
Total	50255	51.07	49155	48.94

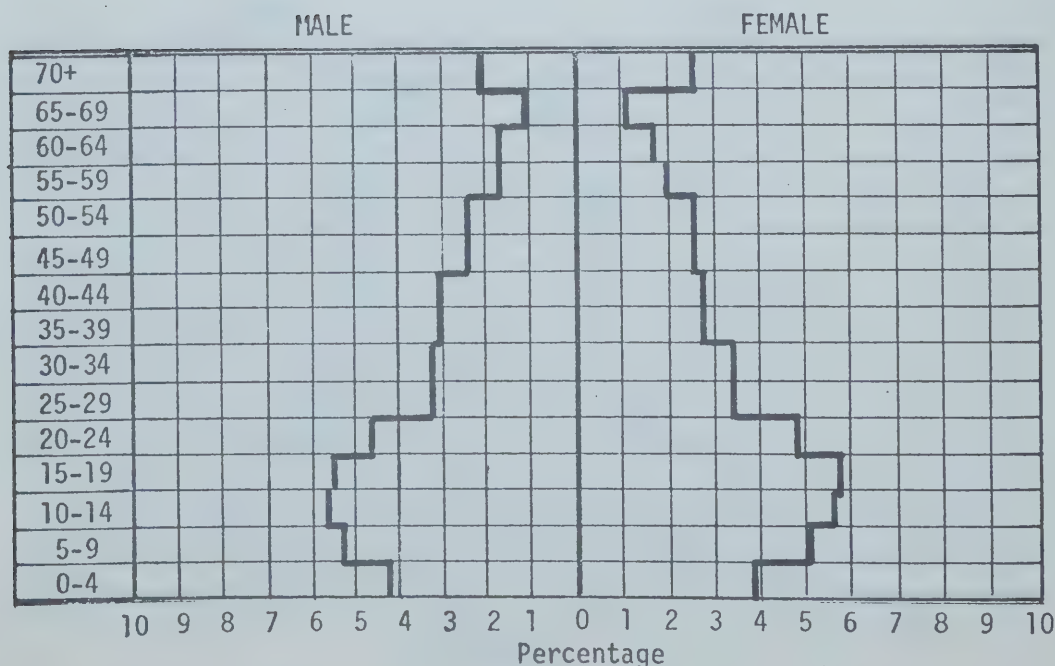
Males $\frac{50255}{48155}$ (number) $\frac{51.07}{48.93}$ (percent)
 Females
 Total
 Population(N) $\frac{98410}{100.00}$ (number) (percent)



Population of AREA:.....CITIES.....,71..(year)

Age	Male	Percent	Female	Percent
70+	565	2.04	705	2.55
65-69	295	1.07	305	1.10
60-64	485	1.75	497	1.80
55-59	485	1.75	498	1.80
50-54	670	2.42	717	2.59
45-49	670	2.42	718	2.59
40-44	837	3.02	775	2.80
35-39	838	3.03	775	2.80
30-34	927	3.35	955	3.45
25-29	928	3.35	955	3.45
20-24	1305	4.72	1375	4.97
15-19	1575	5.69	1585	5.73
10-14	1585	5.73	1550	5.60
5-9	1440	5.20	1410	5.09
0-4	1165	4.21	1085	3.92
Total	13770	49.75	13905	50.24

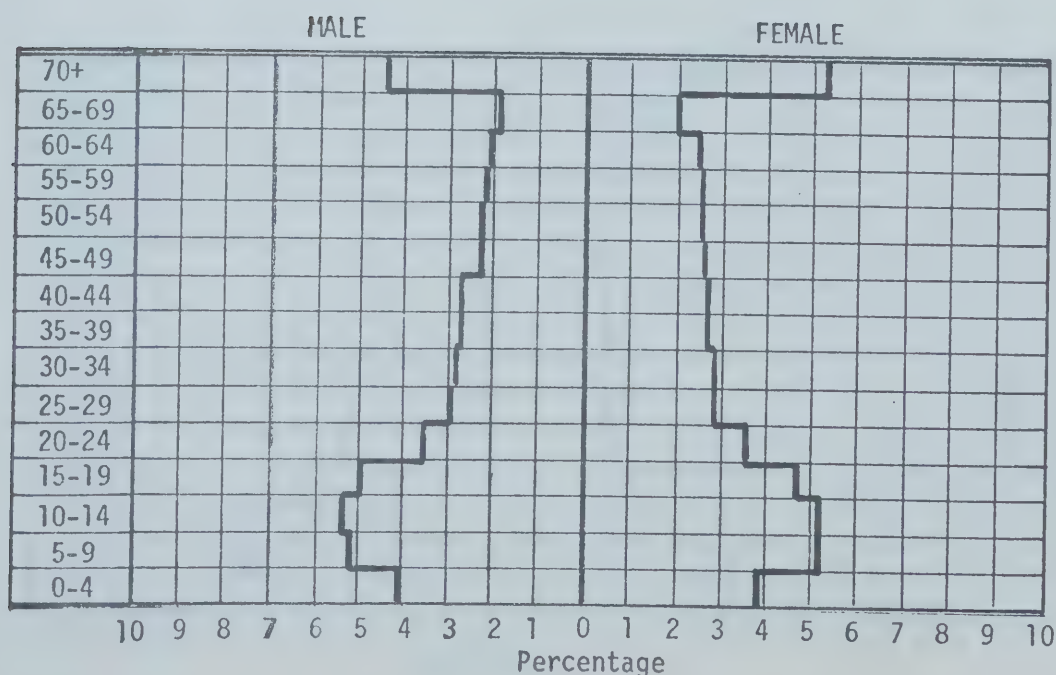
Males 13770 (number) 49.76 (percent)
 Females 13905 (number) 50.24 (percent)
 Total
 Population(N) 27675 (number) 100.00 (percent)



Population of AREA TOWNS.....71..(year)

Age	Male	Percent	Female	Percent
70+	960	4.47	1115	5.20
65-69	400	1.86	420	1.96
60-64	449	2.09	536	2.50
55-59	451	2.10	539	2.51
50-54	479	2.23	546	2.54
45-49	481	2.24	549	2.56
40-44	579	2.70	561	2.61
35-39	581	2.71	564	2.63
30-34	601	2.80	611	2.85
25-29	604	2.82	614	2.86
20-24	750	3.50	770	3.59
15-19	1065	4.96	1000	4.66
10-14	1150	5.36	1130	5.27
5-9	1115	5.20	1120	5.22
0-4	875	4.08	845	3.94
Total	10540	49.12	10920	50.90

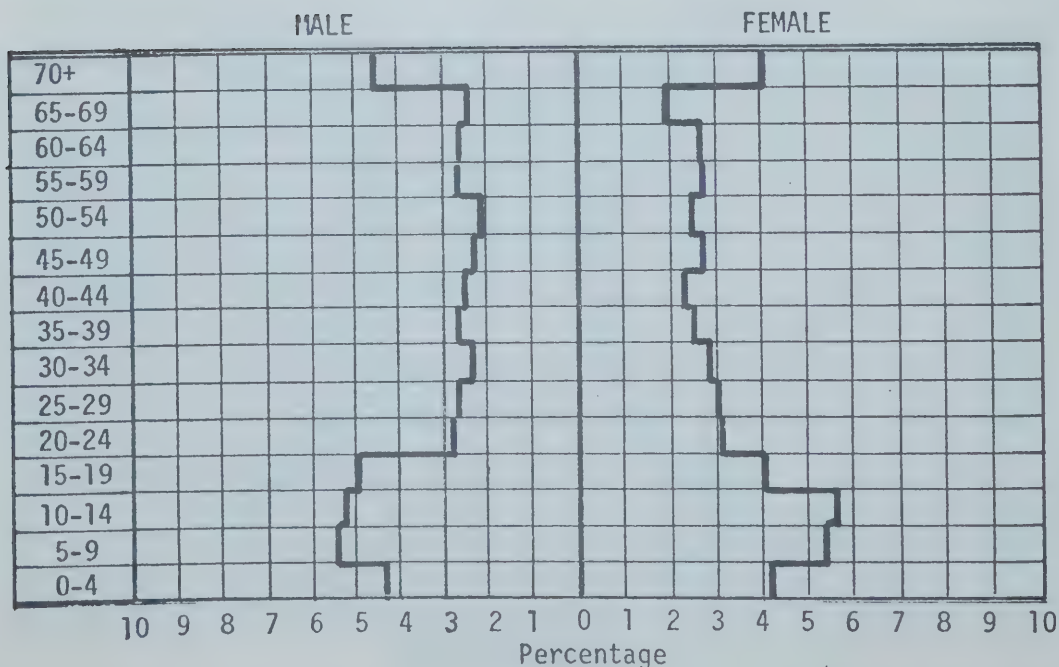
Males $\frac{10540}{10920}$ (number) $\frac{49.11}{50.89}$ (percent)
 Females $\frac{10920}{10920}$ (number) $\frac{50.89}{50.89}$ (percent)
 Total
 Population(N) $\frac{21460}{100.00}$ (number) $\frac{100.00}{100.00}$ (percent)



Population of AREA VILLAGES 71 (year)

Age	Male	Percent	Female	Percent
70+	315	4.55	285	4.11
65-69	170	2.45	135	1.95
60-64	181	2.61	180	2.60
55-59	189	2.73	190	2.74
50-54	150	2.16	178	2.57
45-49	160	2.31	192	2.77
40-44	173	2.50	163	2.35
35-39	182	2.63	172	2.48
30-34	172	2.48	199	2.87
25-29	183	2.64	211	3.05
20-24	195	2.81	215	3.10
15-19	340	4.91	285	4.11
10-14	370	5.34	390	5.63
5-9	375	5.41	380	5.48
0-4	305	4.40	295	4.26
Total	3460	49.93	3470	50.07

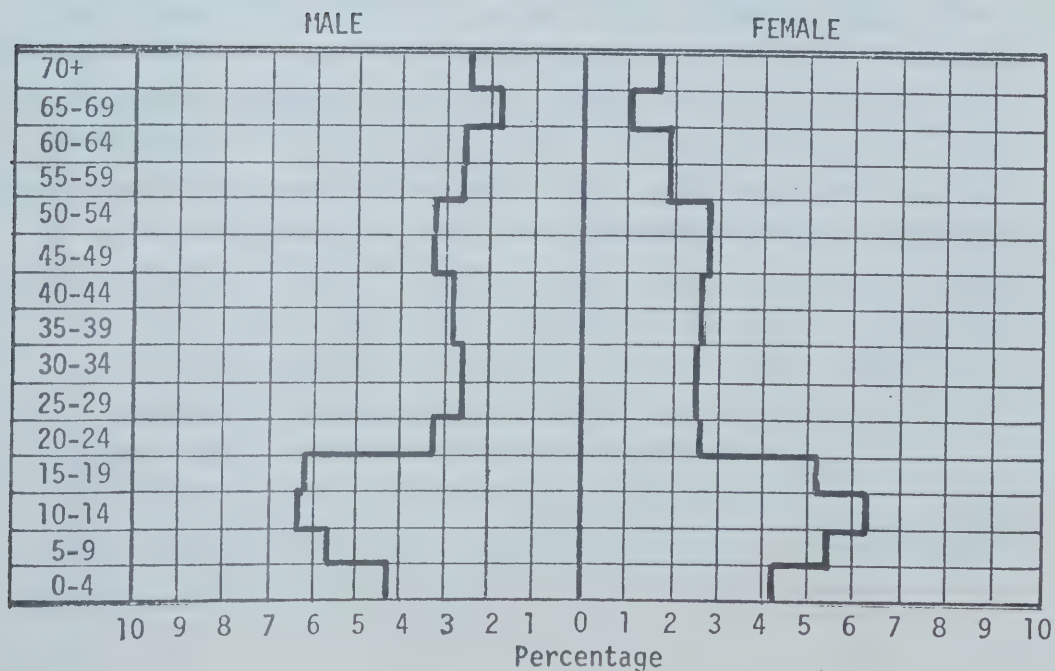
Males $\frac{3460}{3470}$ (number) $\frac{49.93}{50.07}$ (percent)
 Females $\frac{3470}{3470}$ (number) $\frac{50.07}{50.07}$ (percent)
 Total
 Population(N) $\frac{6930}{6930}$ (number) $\frac{100.00}{100.00}$ (percent)



Population of AREA RESIDUALS.....71..(year)

Age	Male	Percent	Female	Percent
70+	1040	2.46	735	1.74
65-69	735	1.83	460	1.09
60-64	1102	2.60	838	1.98
55-59	1108	2.62	842	1.99
50-54	1364	3.22	1214	2.87
45-49	1366	3.23	1216	2.87
40-44	1238	2.92	1178	2.78
35-39	1242	2.93	1182	2.79
30-34	1127	2.66	1078	2.55
25-29	1128	2.66	1082	2.55
20-24	1365	3.22	1110	2.62
15-19	2645	6.25	2180	5.15
10-14	2740	6.47	2690	6.35
5-9	2435	5.75	2295	5.42
0-4	1810	4.27	1760	4.16
Total	22485	53.09	19860	46.91

Males 22485 (number) 53.10 (percent)
 Females 19860 (number) 46.90 (percent)
 Total
 Population(N) 42345 (number) 100.00 (percent)



indicates that the potential population growth from this group is absent. Furthermore, as their children become of age to attend school, enrollments will decline (compare the age group 5 to 9 with that of 0 to 4). Another important factor is that it is apparent that people leave the area at age 20-24.

In summary, according to population data, the two growing counties in the region are Red Deer County and Mountain View County. The cities of Red Deer and Drumheller plus the towns of Olds, Sundre, and Innisfail all appear to be growing. Mixed farming, industry and recreation are all part of their economies. The other counties and municipal districts are not expected to grow. They are largely rural and since the rural population is declining, so are the small communities.

Area Components of the Region

Red Deer County Number 23

The total population of Red Deer County has doubled in the past 20 years, largely due to the growth of the City of Red Deer. The City of Red Deer contributes 60 percent of the county's population. Red Deer appears to be a growth center with a relatively young population. Thus it is expected to continue growing and in turn, the total county population will grow. The county population increased by 1,578 from 1966 to 1971 while the City of Red Deer grew by 1,504. Red Deer also functions as an important trade center serving central Alberta. The town of Innisfail also is expected to increase in population. Thus the major contributions to the total county population comes from the City of Red Deer and various towns. The farm population of Red Deer County is on the decline, contributing 17 percent of the total county population. This is down from 20.1 percent in 1966. The number of census farms also is on the decline along with the total area of farmland. (Definition of census farm

Table 3
Population of Red Deer County (Number 23),
Towns Villages, and Residual, 1951,
1956, 1961, 1966 and 1971

Place	1951	1956	1961	1966	1971
Cities					
Red Deer ²	7,575	12,338	19,612	26,171	27,675
Towns					
Innisfail ²	1,417	1,883	2,270	2,531	2,485
Sylvan Lake	985	1,114	1,381	1,332	1,590
Villages					
Bowden ²	277	296	437	610	550
Delbourne	395	429	450	391	385
Elnora	211	177	214	191	225
Norglenwold ^{3,4}	NIL	NIL	NIL	23	30
Penhold	174	213	319	370	460
Residual ^{1,2,3}	12,243	12,830	13,477	12,943	12,740
Total	23,277	29,280	38,160	44,562	46,140

¹M.D. 55. Red Deer previous to 1963.

²Parts of Red Deer County No. 23 annexed to Red Deer City, 1963 and January 1, 1966; Innisfail town, 1963; Bowden village, 1962.

³Norglenwold village incorporated 1965 (from Red Deer County No. 23).

⁴Summer village.

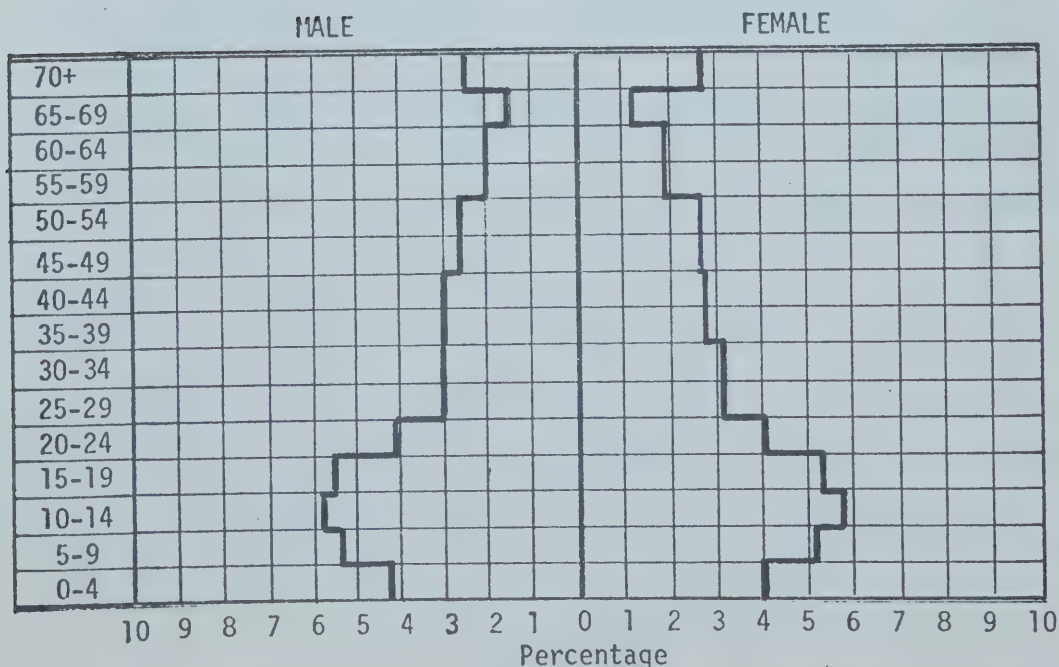
Table 4

Population of Red Deer County 23 (Total, Cities, Towns,
Villages, and Residual)

Population of RED DEER...COUNTY 23...TOTAL...71..(year)

Age	Male	Percent	Female	Percent
70+	1165	2.53	1205	2.61
65-69	665	1.44	565	1.22
60-64	915	1.98	883	1.91
55-59	920	1.99	887	1.92
50-54	1196	2.60	1200	2.60
45-49	1199	2.60	1205	2.61
40-44	1362	2.95	1267	2.75
35-39	1368	2.96	1268	2.75
30-34	1427	3.09	1481	3.21
25-29	1433	3.11	1484	3.22
20-24	1905	4.13	1905	4.13
15-19	2555	5.54	2475	5.36
10-14	2715	5.88	2700	5.85
5-9	2525	5.47	2435	5.28
0-4	1990	4.31	1840	3.99
Total	23340	50.58	22800	49.41

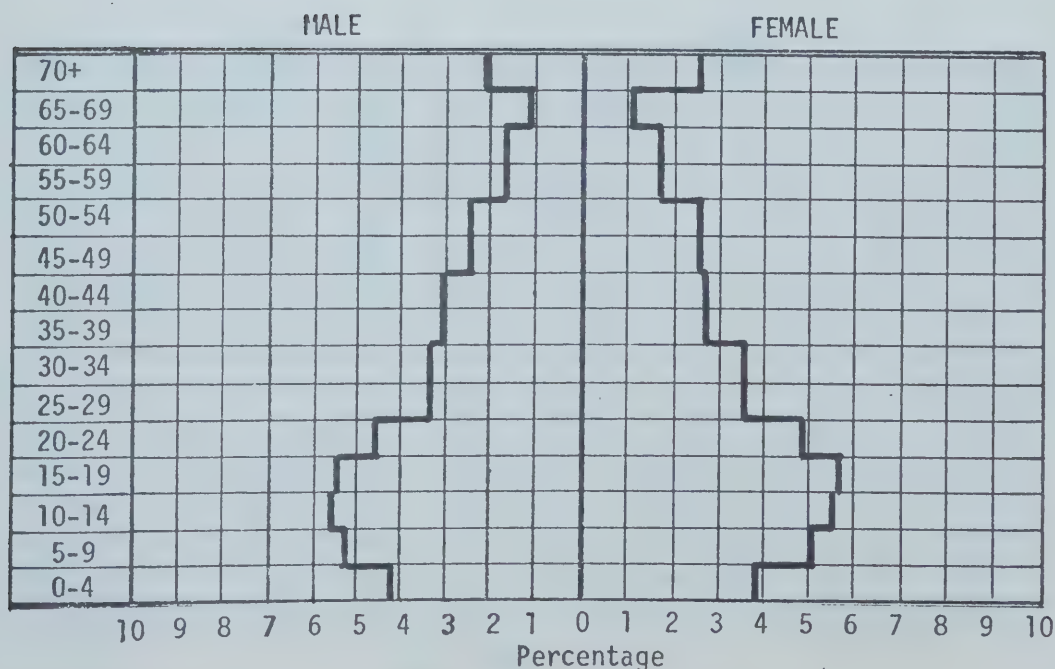
Males $\frac{23340}{23340}$ (number) $\frac{50.59}{49.41}$ (percent)
 Females $\frac{22800}{22800}$ (number) $\frac{49.41}{49.41}$ (percent)
 Total
 Population(N) $\frac{46140}{46140}$ (number) $\frac{100.00}{100.00}$ (percent)



Population of RED DEER COUNTY 23: CITIES...71 (year)

Age	Male	Percent	Female	Percent
70+	565	2.04	705	2.55
65-69	295	1.07	305	1.10
60-64	485	1.75	497	1.80
55-59	485	1.75	498	1.80
50-54	670	2.42	717	2.59
45-49	670	2.42	718	2.59
40-44	837	3.02	775	2.80
35-39	838	3.03	775	2.80
30-34	927	3.35	955	3.45
25-29	928	3.35	955	3.45
20-24	1305	4.72	1375	4.97
15-19	1575	5.69	1585	5.73
10-14	1585	5.73	1550	5.60
5-9	1440	5.20	1410	5.09
0-4	1165	4.21	1085	3.92
Total	13770	49.75	13905	50.24

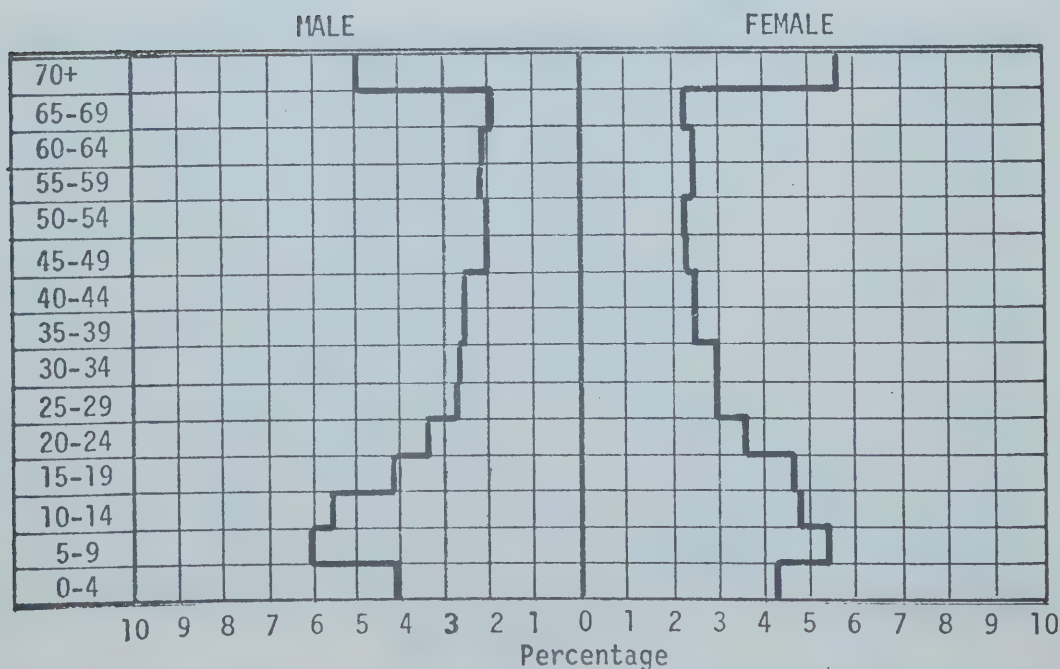
Males $\frac{13770}{13905}$ (number) $\frac{49.76}{50.24}$ (percent)
 Females $\frac{13905}{13905}$ (number) $\frac{50.24}{50.24}$ (percent)
 Total
 Population(N) $\frac{27675}{27675}$ (number) $\frac{100.00}{100.00}$ (percent)



Population of RED DEER COUNTY 23 TOWNS... (year)

Age	Male	Percent	Female	Percent
70+	200	4.91	225	5.52
65-69	80	1.96	90	2.21
60-64	87	2.13	100	2.45
55-59	88	2.16	100	2.45
50-54	85	2.09	92	2.26
45-49	85	2.09	93	2.28
40-44	105	2.58	100	2.45
35-39	105	2.58	100	2.45
30-34	112	2.75	120	2.95
25-29	113	2.77	120	2.95
20-24	140	3.44	145	3.56
15-19	170	4.17	190	4.66
10-14	230	5.64	195	4.79
5-9	245	6.01	220	5.40
0-4	165	4.05	175	4.29
Total	2010	49.33	2065	50.67

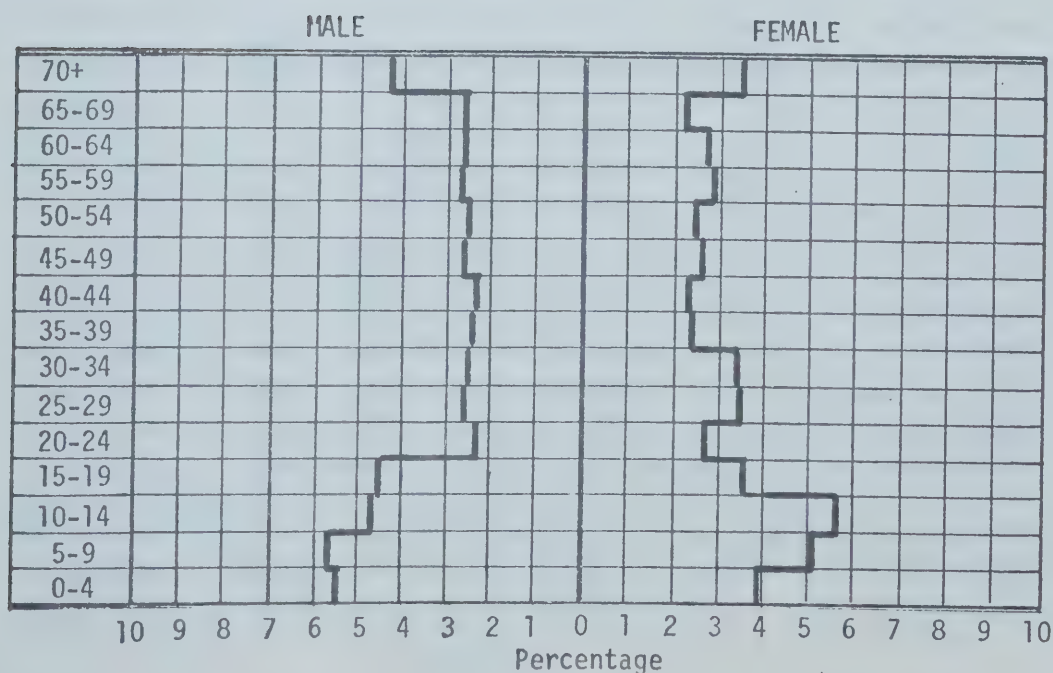
Males $\frac{2010}{2065}$ (number) $\frac{49.33}{50.67}$ (percent)
 Females
 Total
 Population(N) $\frac{4075}{100.00}$ (number) (percent)



Population of RED DEER COUNTY 23: VILLAGES, 71 (year)

Age	Male	Percent	Female	Percent
70+	70	4.24	55	3.33
65-69	45	2.73	35	2.12
60-64	46	2.79	46	2.79
55-59	49	2.97	49	2.97
50-54	41	2.48	41	2.48
45-49	44	2.67	44	2.67
40-44	38	2.30	37	2.24
35-39	42	2.55	38	2.30
30-34	43	2.61	54	3.27
25-29	47	2.85	56	3.39
20-24	40	2.42	45	2.73
15-19	75	4.55	60	3.64
10-14	80	4.85	95	5.76
5-9	95	5.76	85	5.15
0-4	90	5.45	65	3.94
Total	845	51.22	805	48.78

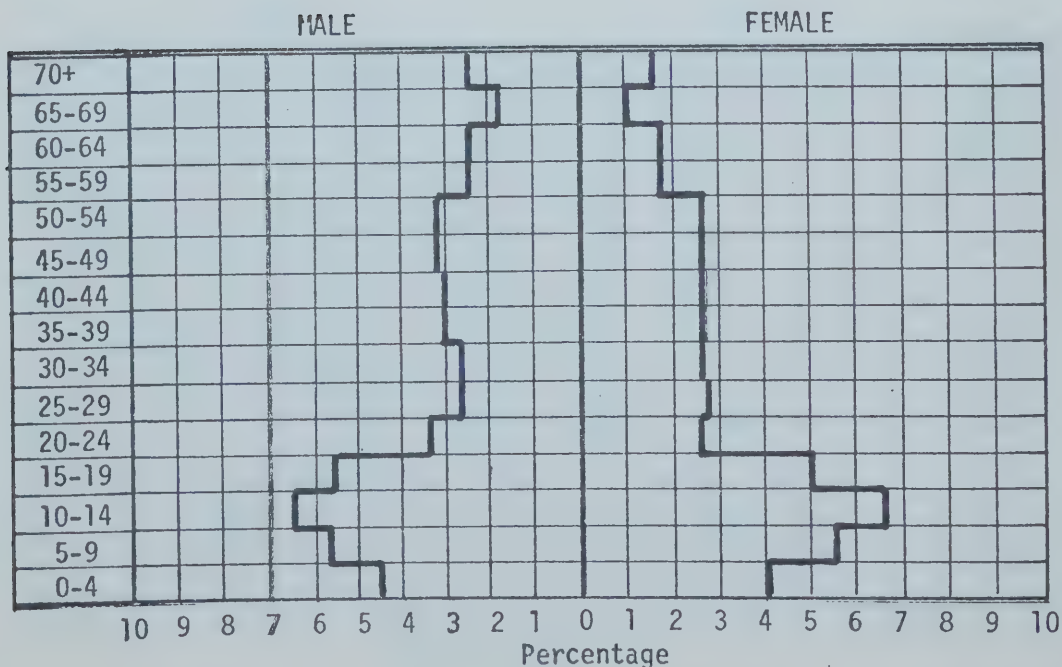
Males $\frac{845}{1650}$ (number) $\frac{51.21}{100.00}$ (percent)
 Females $\frac{805}{1650}$ (number) $\frac{48.79}{100.00}$ (percent)
 Total
 Population(N) $\frac{1650}{1650}$ (number) $\frac{100.00}{100.00}$ (percent)



Population of RED DEER COUNTY 23: RESIDUAL, 71 (year)

Age	Male	Percent	Female	Percent
70+	330	2.59	220	1.73
65-69	245	1.92	135	1.06
60-64	297	2.33	240	1.88
55-59	298	2.34	240	1.88
50-54	400	3.14	350	2.75
45-49	400	3.14	350	2.75
40-44	382	3.00	355	2.79
35-39	383	3.01	355	2.79
30-34	345	2.71	352	2.76
25-29	345	2.71	353	2.77
20-24	420	3.30	340	2.67
15-19	735	5.77	640	5.02
10-14	820	6.44	860	6.75
5-9	745	5.85	720	5.65
0-4	570	4.47	515	4.04
Total	6715	52.72	6025	47.29

Males $\frac{6715}{12740}$ (number) $\frac{52.71}{100.00}$ (percent)
 Females $\frac{6025}{12740}$ (number) $\frac{47.29}{100.00}$ (percent)
 Total
 Population(N) $\frac{12740}{12740}$ (number) $\frac{100.00}{100.00}$ (percent)



from Statistics Canada 1971 Census--Census farms are defined as agricultural holdings of one acre or more with sales of agricultural products during the 12 months prior to June 1, 1971 of \$50 or more. This is the same definition that was used in the 1966 and 1961 censuses.) However, the number of census farms with sales of \$5,000 or more yearly remains stable at 61.54 percent of all census farms. These farms occupy 85 percent of the total farm area. Of all census farms, 18.76 percent are making less than \$2,500. Red Deer County has a high population density of 28.97 persons per square mile. Again, this is largely attributed by the city of Red Deer. Of the total population 89.54 percent speak English. Ethnic origin in order of prevalence is British, German, Scandinavian, Netherlands, French and other.

The county itself is bountiful in commercial deposits of coal, cement, stone, clay, sand/gravel, natural gas and timber. Agriculture is mixed (cereals and coarse grains, livestock, grass seed, poultry and eggs, and straw). Red Deer and Innisfail appear to be the real growth centers of the county. The other towns and villages--Elnora, Delbourn, Sylvan Lake, Bowden, and Norglenwold--serve as important shopping and education centers for a prosperous mixed farming area. They also serve as important residential and retirement centers.

Mountain View County Number 17

County Number 17's total population is a young population which indicates probable future growth. There is a large school age population and a relatively small percentage of people over age 65. The towns of Carstairs, Olds, Sundre, and Didsbury are important retirement and residential towns. Sundre has a fairly young population base and can be expected to grow, although not as fast as Olds, its nearby competitor. Olds contributes 21.53 percent of the county's total population. It is an important retirement

center, educational center, growth center and trade center. Its trading area serves a population of 8,170 for an area 20 miles east, 45 miles west, 7 miles north and 6 miles south (1971 population figures). Olds is growing rapidly and past trends indicate it could well double its population by 2001 (Statistics Canada Census 1971 Projections). Cremona is the only village within the county and its population is on the decline. It appears to be a retirement and residential village for families. The rural population (farm population plus unincorporated places) will likely continue to decline. There are very few young children and the bulk of the population falls between 35 and 65 years. As can be expected, males outnumber females. The actual farm population of Mountain View County is on the decline, contributing 41.56 percent of the total county population. This is down from the 1966 figure of 52.27 percent. However, the total farm acreage has increased. The number of census farms is decreasing; however, the percentage of farms with sales of \$5,000 or more is increasing. Currently, 67 percent of all census farms fall into this category and occupy 84.4 percent of the total area of farmland. Of all census farms, 19.5 percent have sales of less than \$2,500. The total county comprises 1,441.03 square miles with a population density of 10.85 persons per square mile. Of the total population, 89.74 percent speak English. Ethnic origin in order of prevalence is the British Isles, Germany, Scandinavia, the Netherlands and other.

In summary, the future looks bright for Mountain View County. Even though the rural population is declining, Didsbury, Carstairs, Olds and Sundre are all predicted to increase. The town of Olds, particularly, is expected to be an important growth and trade center within the county. The economy around Sundre and Olds is based largely on mixed farming (wheat and coarse grains, rape, hay,

Table 5
Population of Mountain View County (Number 17),
Towns, Villages, and Residual, 1951
1956, 1966 and 1971

Place	1951	1956	1961	1966	1971
Towns					
Carstairs	468	449	665	761	885
Didsbury	1,180	1,227	1,254	1,586	1,835
Olds ¹	1,617	1,980	2,433	2,999	3,370
Sundre ¹	337	923	853	831	935
Villages					
Cremona	NIL	192	221	191	185
Residual	9,497	9,273	9,348	8,656	8,445
Total	13,099	14,044	14,774	15,024	15,655

¹Parts of Mountain View County No. 17 annexed to towns of Olds and Sundre 1962 and January 1, 1966, respectively, and to I.D. 58, Division No. 9, 1965.

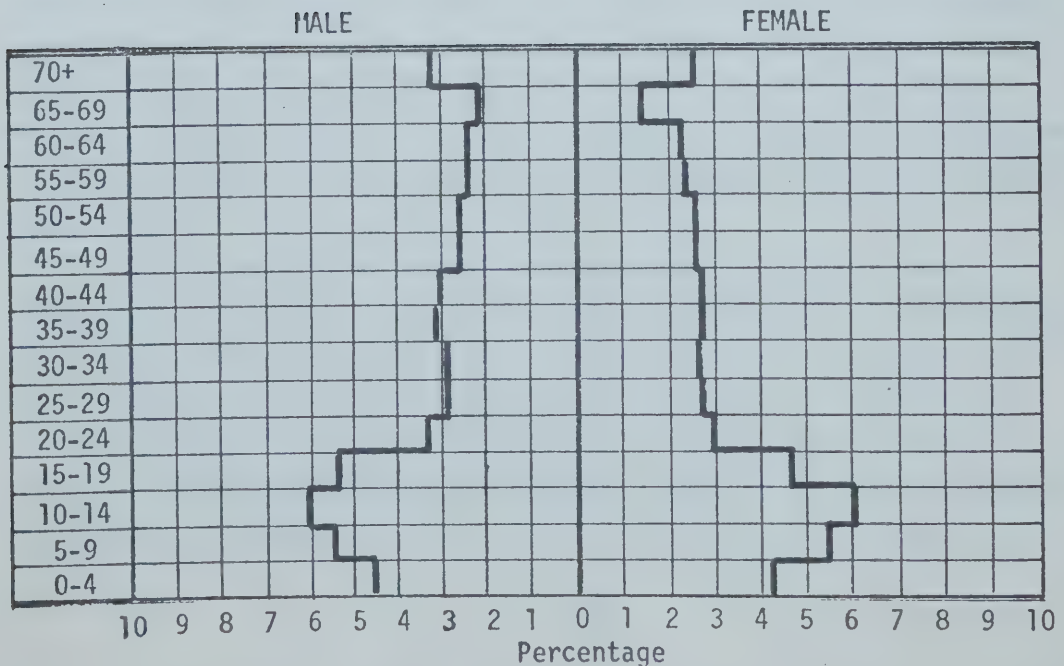
Table 6

Population of Mountain View County (Total, Towns,
Villages, and Residual)

Population of MOUNTAIN VIEW COUNTY: TOTAL...71..(year)

Age	Male	Percent	Female	Percent
70+	495	3.16	395	2.52
65-69	325	2.08	225	1.44
60-64	377	2.41	356	2.27
55-59	378	2.41	359	2.29
50-54	410	2.62	406	2.59
45-49	410	2.62	409	2.61
40-44	476	3.04	439	2.80
35-39	479	3.06	441	2.82
30-34	457	2.92	431	2.75
25-29	458	2.93	434	2.77
20-24	485	3.10	470	3.00
15-19	835	5.33	750	4.79
10-14	950	6.07	945	6.04
5-9	850	5.43	855	5.46
0-4	710	4.53	645	4.12
Total	8095	51.71	7560	48.27

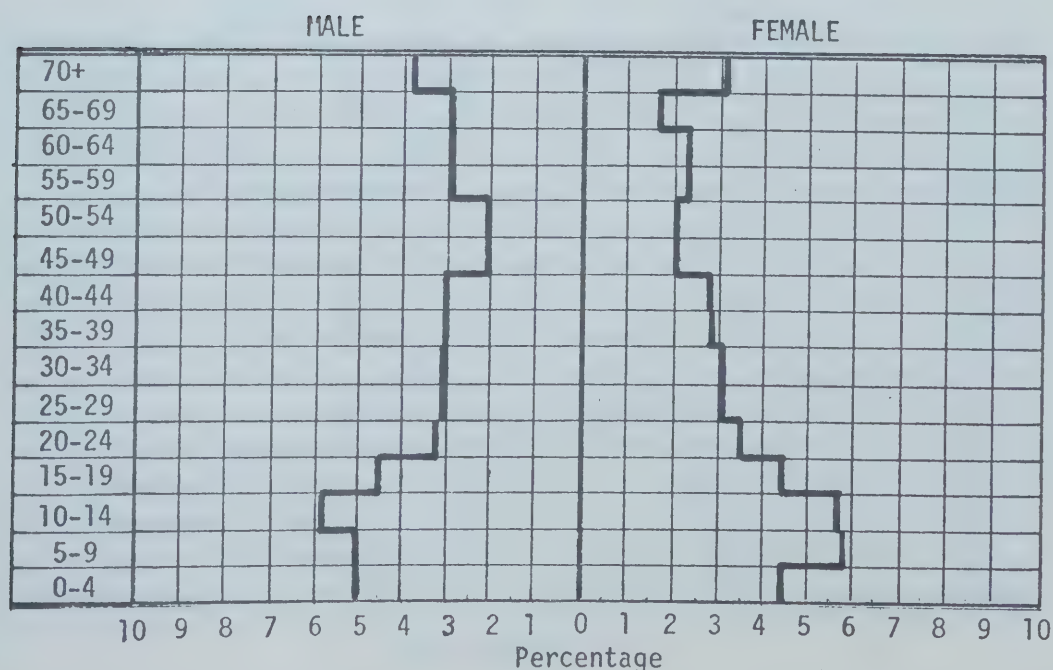
Males 8095 (number) 51.71 (percent)
 Females 7560 (number) 48.29 (percent)
 Total
 Population(N) 15655 (number) 100.00 (percent)



Population of MOUNTAIN VIEW COUNTY: TOWNS..., 71..(year)

Age	Male	Percent	Female	Percent
70+	265	3.77	255	3.20
65-69	140	1.99	120	1.71
60-64	130	1.85	162	2.31
55-59	130	1.85	163	2.32
50-54	145	2.06	152	2.16
45-49	145	2.06	153	2.18
40-44	212	3.02	192	2.73
35-39	213	3.03	193	2.75
30-34	225	3.20	222	3.16
25-29	225	3.20	223	3.17
20-24	235	3.35	250	3.56
15-19	320	4.55	315	4.48
10-14	405	5.76	400	5.69
5-9	360	5.12	410	5.84
0-4	350	4.96	315	4.48
Total	3500	49.79	3525	49.74

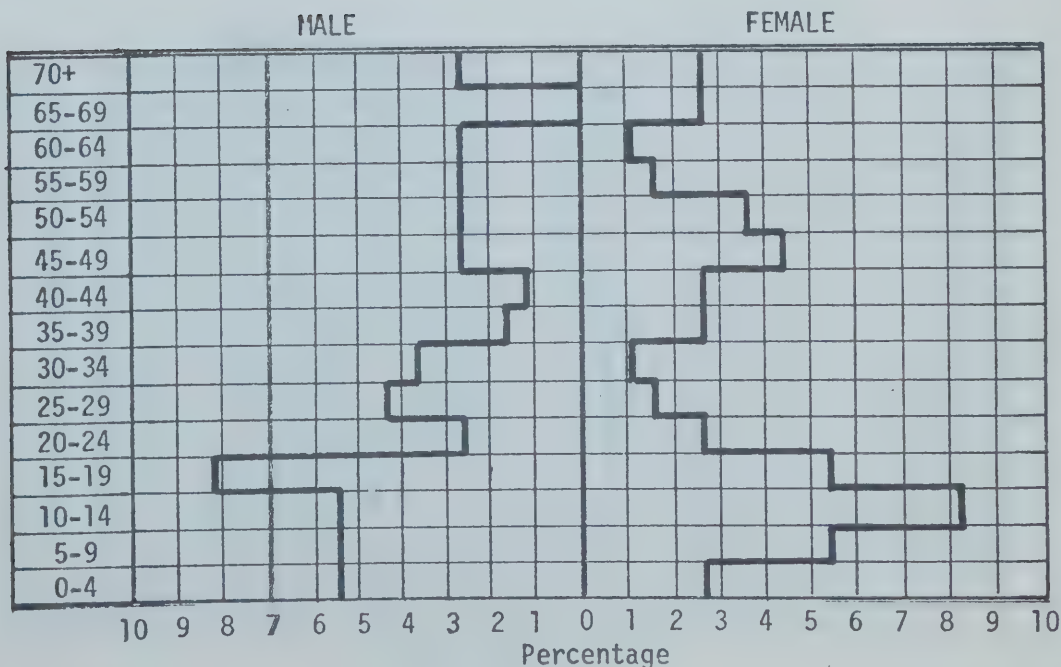
Males $\frac{3500}{3525}$ (number) $\frac{49.81}{50.18}$ (percent)
 Females $\frac{3525}{3525}$ (number) $\frac{50.18}{50.18}$ (percent)
 Total
 Population(N) $\frac{7025}{7025}$ (number) $\frac{100.00}{100.00}$ (percent)



Population of MOUNTAIN VIEW COUNTY: VILLAGES..., 71..(year)

Age	Male	Percent	Female	Percent
70+	5	2.70	5	2.70
65-69	0	0.00	5	2.70
60-64	5	2.70	2	1.08
55-59	5	2.70	3	1.62
50-54	5	2.70	7	3.78
45-49	5	2.70	8	4.32
40-44	2	1.08	5	2.70
35-39	3	1.62	5	2.70
30-34	7	3.78	2	1.08
25-29	8	4.32	3	1.62
20-24	5	2.70	5	2.70
15-19	15	8.11	10	5.41
10-14	10	5.41	15	8.11
5-9	10	5.41	10	5.41
0-4	10	5.41	5	2.70
Total	95	51.34	90	48.63

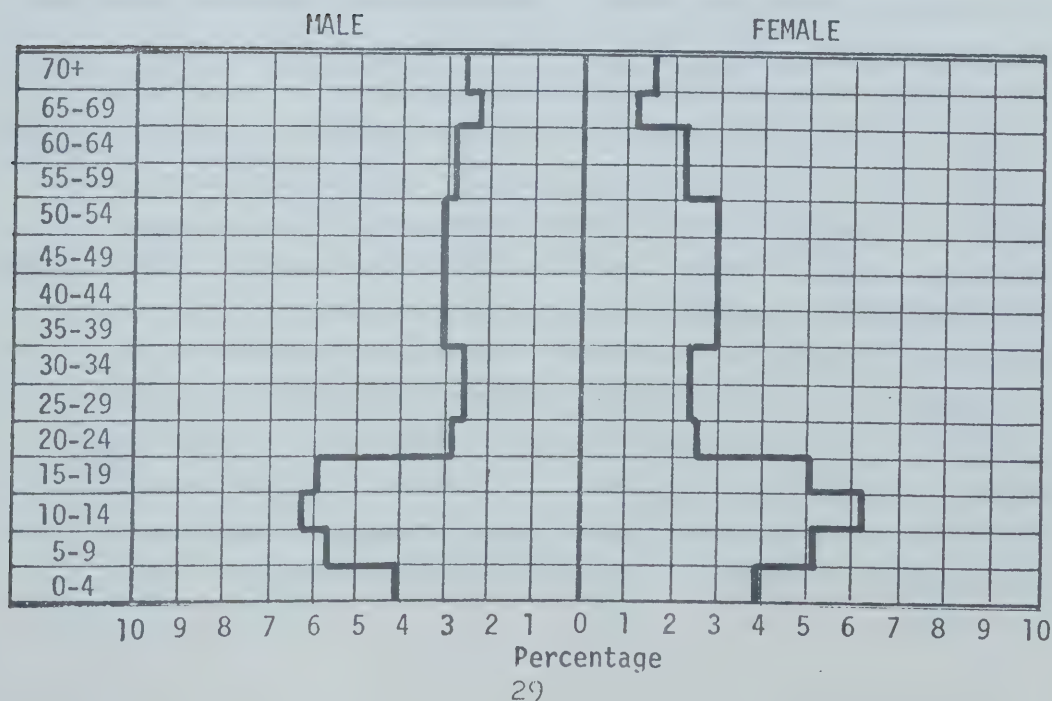
Males 95 (number) 51.35 (percent)
 Females 90 (number) 48.65 (percent)
 Total
 Population(N) 185 (number) 100.00 (percent)



Population of MOUNTAIN VIEW COUNTY: RESIDUAL, 71..(year)

Age	Male	Percent	Female	Percent
70+	225	2.66	135	1.60
65-69	185	2.19	100	1.18
60-64	242	2.87	192	2.27
55-59	243	2.88	193	2.29
50-54	260	3.08	247	2.92
45-49	260	3.08	248	2.94
40-44	262	3.10	242	2.87
35-39	263	3.11	243	2.88
30-34	225	2.66	207	2.45
25-29	225	2.66	208	2.46
20-24	245	2.90	215	2.55
15-19	500	5.92	425	5.03
10-14	535	6.34	530	6.28
5-9	480	5.68	435	5.15
0-4	350	4.14	325	3.85
Total	4500	53.27	3945	46.72

Males 4500 (number) 53.29 (percent)
 Females 3945 (number) 46.71 (percent)
 Total
 Population(N) 8445 (number) 100.00 (percent)



grass seed, poultry products, dairy products, horses, cattle, sheep, hogs and honey). The area is also rich in various commercial deposits of sulphur, cement, clay, sand/gravel, petroleum and natural gas. With the vast forest reserves and foothill country to the west, recreation also is a major economic boost. Didsbury serves a trading area 20 miles east, 30 miles west, 3 miles north and 3 miles south. The area is generally a mixed farming economy with a potential timber industry plus fishing as a sport.

Recreation will likely become increasingly important. The town of Sundre has always been a competitor of Olds. Olds has had the advantage of being located on main transportation lines (both railway and highway). Sundre has also had water drainage and flood problems. A paved road between Calgary and Sundre is apparently on the high priority list. So far it has been completed as far as Cremona. This should be an advantage for Sundre. The area west of Sundre can be considered a sportsman's paradise.

Lacombe County Number 14

The total population of Lacombe County has changed very little over the years. The town of Lacombe contributes 23.0 percent of the total population. Lacombe is an important trade and education center for the surrounding mixed farming area (wheat and coarse grains, horses, cattle, sheep, hogs, dairy products, poultry products, honey and straw). Lacombe's trade area stretches 28 miles east and 20 miles west, 8 miles north and 8 miles south. The village of Blackfelds appears to be growing rapidly. There is a relatively young population. It can definitely be considered a growth center. Other communities in the county--Alix, Eckville, Bentley, Mirror and Clive--are mainly communities centered in a mixed farming area and serve as centers catering to the farmers. They are important residential and retirement centers.

Table 7
Population of Lacombe County (Number 14),
Towns, Villages, and Residual, 1951,
1956, 1961, 1966 and 1971

Place	1951	1956	1961	1966	1971
Towns					
Lacombe	2,277	2,747	3,029	3,035	3,445
Eckville ¹	379	456	580	716	665
Villages					
Alix	461	517	631	636	560
Bentley ¹	439	536	588	637	615
Blackfolds ¹	154	340	477	729	905
Clive	241	249	251	238	250
Gull Lake ^{1,2}	31	32	40	48	45
Mirror	635	591	577	433	370
Residual	8,612	8,351	8,725	8,367	8,100
Total	13,230	13,819	14,898	14,839	14,955

¹Parts of Lacombe County Number 14 annexed to villages of Blackfolds, January 1, 1966; Eckville and Gull Lake, December 30, 1961; Bentley, 1962, while part of the latter has been added to Lacombe County Number 14.

²Summer village.

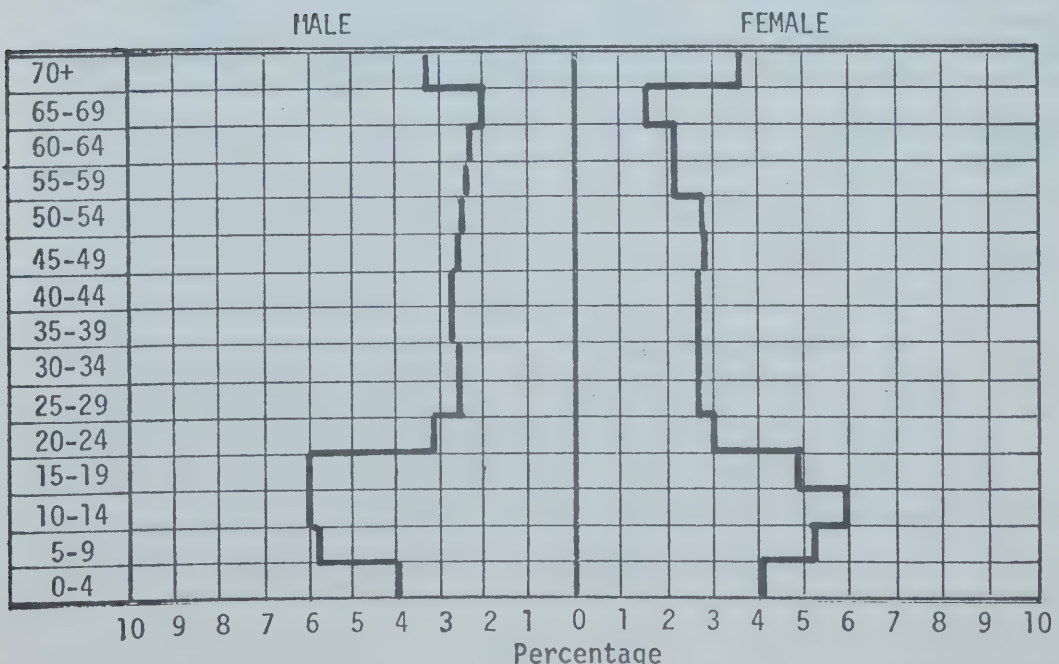
Table 8

Population of Lacombe County (Total,
Towns, Residual)

Population of ..LACOMBE..COUNTY!..TOTAL.....,71.(year)

Age	Male	Percent	Female	Percent
70+	520	3.48	545	3.64
65-69	295	1.97	235	1.57
60-64	366	2.45	324	2.17
55-59	369	2.47	326	2.18
50-54	397	2.65	407	2.72
45-49	398	2.66	408	2.73
40-44	407	2.72	387	2.59
35-39	408	2.73	388	2.59
30-34	387	2.59	384	2.57
25-29	388	2.59	386	2.58
20-24	480	3.21	450	3.01
15-19	900	6.02	725	4.85
10-14	905	6.05	895	5.98
5-9	850	5.68	805	5.38
0-4	595	3.98	625	4.18
Total	7 665	51.25	7 290	48.74

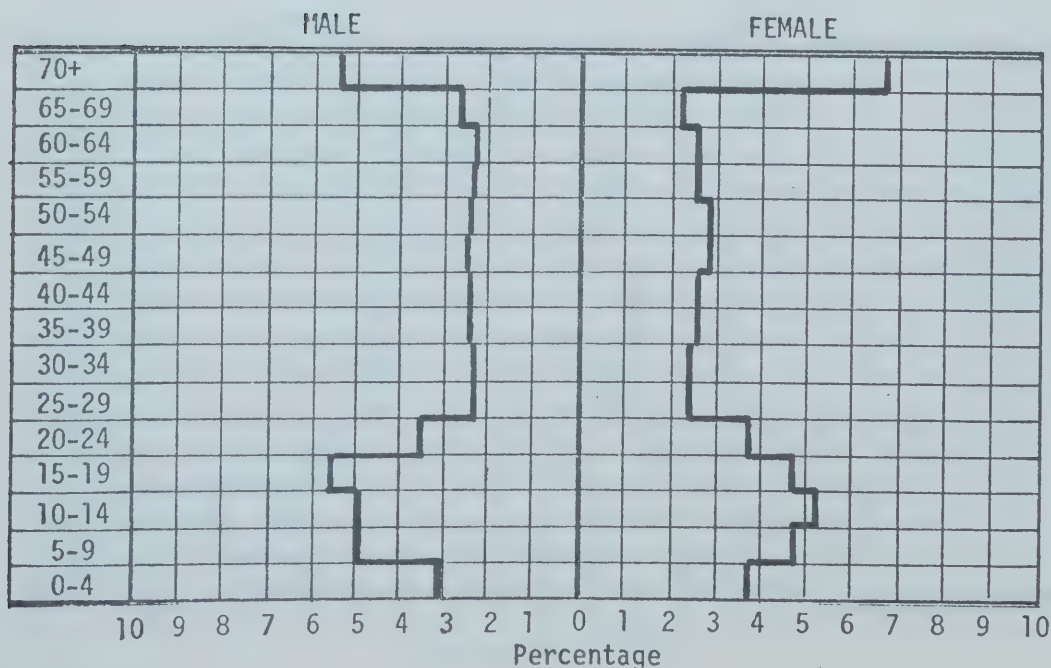
Males 7665 (number) 51.25 (percent)
 Females 7290 (number) 48.75 (percent)
 Total
 Population(N) 14955 (number) 100.00 (percent)



Population of LACOMBE COUNTY: TOWNS....., 71..(year)

Age	Male	Percent	Female	Percent
70+	225	5.47	280	6.81
65-69	75	1.82	90	2.19
60-64	87	2.12	105	2.55
55-59	88	2.14	105	2.55
50-54	102	2.48	120	2.92
45-49	103	2.51	120	2.92
40-44	97	2.36	105	2.55
35-39	98	2.38	105	2.55
30-34	95	2.31	95	2.31
25-29	95	2.31	95	2.31
20-24	145	3.53	155	3.74
15-19	230	5.60	195	4.74
10-14	205	4.99	215	5.23
5-9	205	4.99	195	4.74
0-4	125	3.04	155	3.74
Total	1975	48.05	2135	51.91

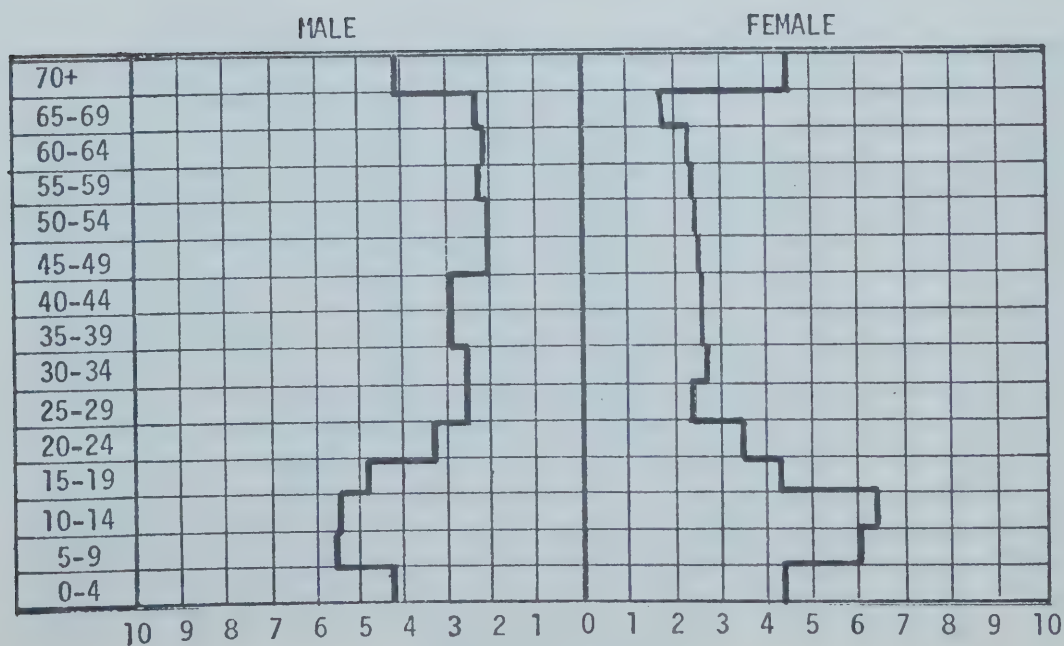
Males 1975 (number) 48.05 (percent)
 Females 2135 (number) 51.95 (percent)
 Total
 Population(N) 4110 (number) 100.00 (percent)



Population of LACOMBE COUNTY: VILLAGES..., 71.. (year)

Age	Male	Percent	Female	Percent
70+	110	4.01	125	4.55
65-69	65	2.37	50	1.82
60-64	57	2.07	62	2.26
55-59	58	2.11	63	2.30
50-54	55	2.00	67	2.44
45-49	55	2.00	68	2.48
40-44	80	2.91	70	2.55
35-39	80	2.91	70	2.55
30-34	70	2.55	77	2.81
25-29	70	2.55	78	2.81
20-24	90	3.28	95	3.46
15-19	135	4.92	115	4.19
10-14	150	5.46	135	4.86
5-9	155	5.65	165	5.93
0-4	115	4.19	120	4.37
Total	1345	48.98	1400	50.58

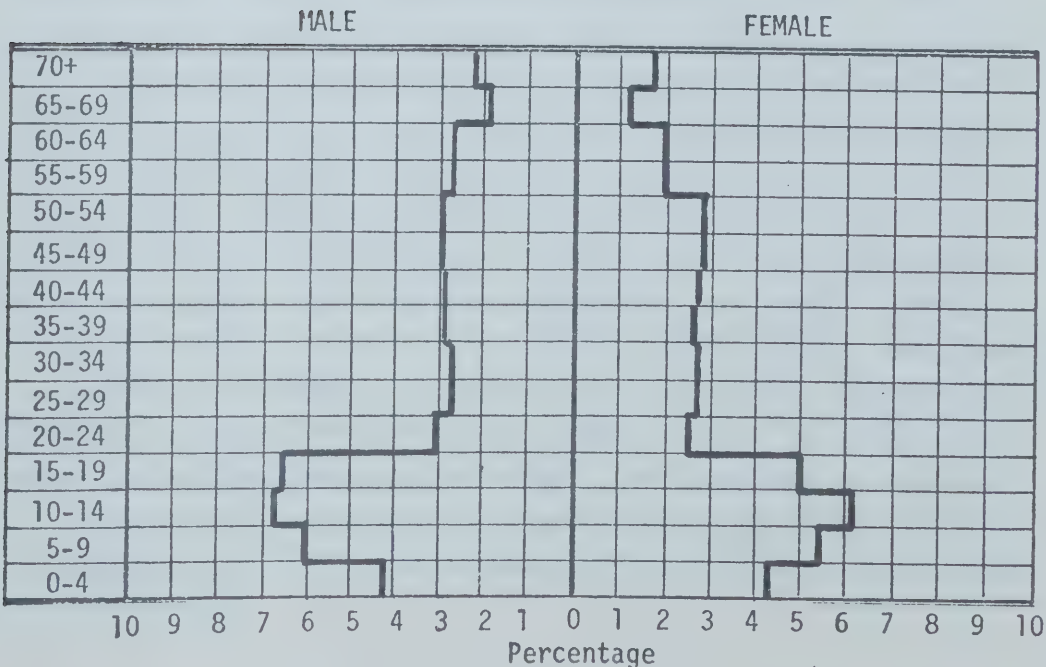
Males 1345 (number) 49.00 (percent)
 Females 1400 (number) 51.00 (percent)
 Total
 Population(N) 2745 (number) 100.00 (percent)



Population of LACOMBE COUNTY: RESIDUAL.....,71..(year)

Age	Male	Percent	Female	Percent
70+	185	2.28	140	1.73
65-69	155	1.91	95	1.17
60-64	222	2.74	157	1.94
55-59	223	2.75	158	1.95
50-54	240	2.96	220	2.72
45-49	240	2.96	220	2.72
40-44	230	2.84	212	2.62
35-39	230	2.84	213	2.63
30-34	222	2.74	212	2.62
25-29	223	2.75	213	2.63
20-24	245	3.02	200	2.47
15-19	535	6.60	415	5.12
10-14	550	6.79	505	6.23
5-9	490	6.05	445	5.49
0-4	355	4.38	350	4.32
Total	4345	53.61	3755	46.36

Males $\frac{4345}{\text{number}}$ 53.64 (percent)
Females $\frac{3755}{\text{number}}$ 46.36 (percent)
Total
Population(N) $\frac{8100}{\text{number}}$ 100.00 (percent)



The farm population of Lacombe County, however, is on the decline, contributing 37.22 percent of the total population. This is down from 46.37 percent in 1966. The number of census farms is on the decline along with the total area of farmland. Thus, with a declining farm population, the small communities centered in this farm area cannot be expected to thrive. The percentage of census farms with sales over \$5,000 has increased from 62.49 percent in 1966 to 87.95 percent in 1971. Lacombe County's population density is 13.234 persons per square mile. Of the total population, 88.31 percent speak English. Ethnic origins in order of prevalence are the British Isles, Scandinavia, Germany, Netherlands and other.

Although the county seems to depend economically on a mixed farming economy, there are commercial deposits of coal, sulphur, sand/gravel, petroleum and natural gas.

Stettler County Number 6

The total population of Stettler County has remained relatively stable over the past two decades. Its population, if anything, appears to be on the decline. The town of Stettler contributes 42.18 percent of the total population; however, future growth seems unlikely due to the constant decline of population over the past 20 years. Stettler functions as an important trade center and serves a population of 29,350 covering an area 50 miles east and 30 miles west, 25 miles north and 40 miles south. It also can be characterized as a retirement center. Donalda, Botha and Big Valley also can be classified as retirement centers. The farm population of Stettler County is on the decline, contributing 38.55 percent of the total county population. This is down from 43.16 percent in 1966. The number of census farms plus the total area of farmland is also on the decline. However, the percentage of farms with sales of \$5,000 or more has increased from 62.49 percent in 1966 to 69.73 percent in 1971. These farms

Table 9
Population of Stettler County (Number 6),
Towns, Villages, and Residual, 1951,
1956, 1961, 1966, and 1971

Place	1951	1956	1961	1966	1971
Towns					
Stettler ¹	2,442	3,359	3,638	3,988	4,155
Villages					
Big Valley	307	354	461	378	310
Botha ¹	98	102	112	134	110
Donalda	318	256	289	271	230
Gadsby	128	145	98	84	45
Rochon Sands ²	NIL	NIL	28	2	25
Residual	6,059	6,061	5,968	5,640	4,975
Total	9,352	10,277	10,594	10,497	9,850

¹Parts of Stettler County Number 6 annexed to Stettler town and Botha Village, 1965.

²Summer village.

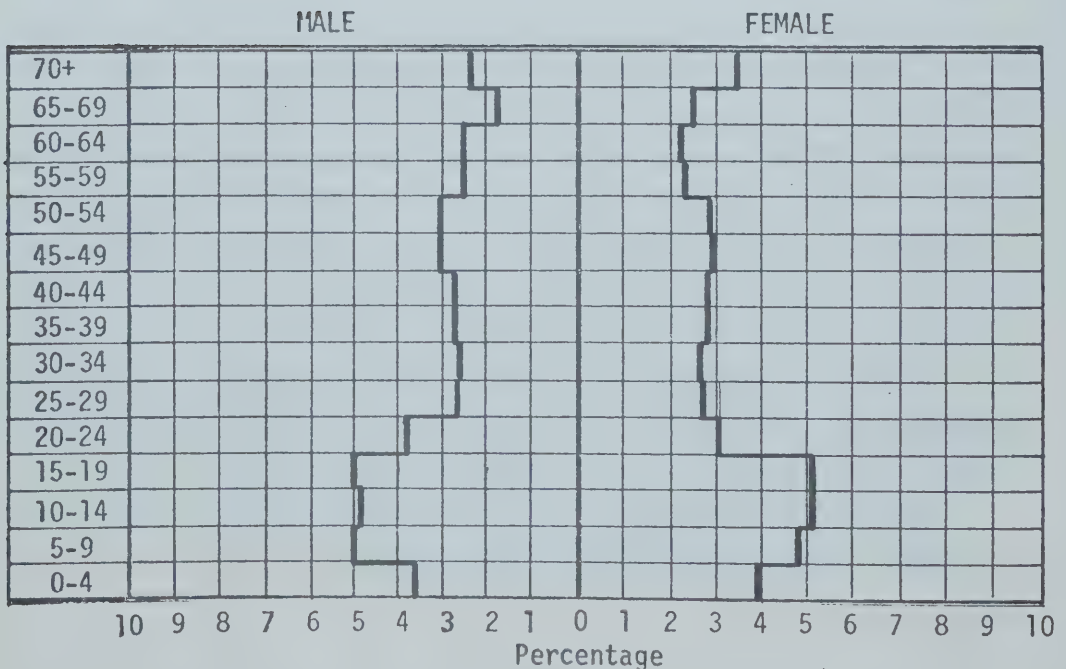
Table 10

Population of Stettler County (Total, Towns,
Villages, and Residual)

Population of STELLAR COUNTY: TOTAL....., 71 (year)

Age	Male	Percent	Female	Percent
70+	335	3.40	345	3.50
65-69	170	1.73	160	1.52
60-64	257	2.61	229	2.32
55-59	258	2.62	231	2.35
50-54	296	3.01	279	2.83
45-49	299	3.03	281	2.85
40-44	280	2.84	264	2.68
35-39	280	2.84	266	2.70
30-34	267	2.71	259	2.63
25-29	268	2.72	261	2.65
20-24	375	3.81	310	3.15
15-19	590	5.99	505	5.13
10-14	580	5.89	505	5.13
5-9	485	4.92	480	4.87
0-4	360	3.65	305	3.91
Total	5100	51.77	4750	48.22

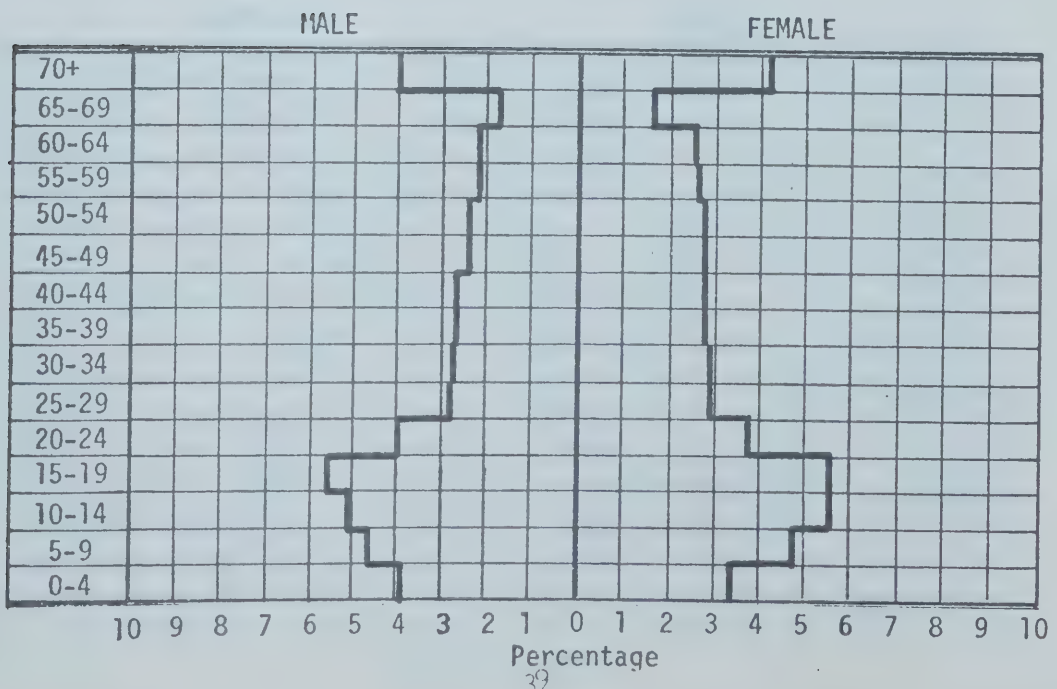
Males $\frac{5100}{\text{number}}$ (number) $\frac{51.78}{\text{percent}}$ (percent)
 Females $\frac{4750}{\text{number}}$ (number) $\frac{48.22}{\text{percent}}$ (percent)
 Total
 Population(N) $\frac{9850}{\text{number}}$ (number) $\frac{100.00}{\text{percent}}$ (percent)



Population of STETTLAR COUNTY: TOWNS....., fl. (year)

Age	Male	Percent	Female	Percent
70+	165	3.97	220	5.29
65-69	70	1.68	70	1.68
60-64	90	2.17	107	2.57
55-59	90	2.17	108	2.60
50-54	102	2.45	112	2.70
45-49	103	2.48	113	2.72
40-44	115	2.77	112	2.70
35-39	115	2.77	113	2.72
30-34	117	2.82	117	2.82
25-29	118	2.84	118	2.84
20-24	165	3.97	155	3.73
15-19	235	5.65	210	5.05
10-14	215	5.17	210	5.05
5-9	190	4.57	200	4.81
0-4	160	3.87	140	3.37
Total	2050	49.33	2105	50.65

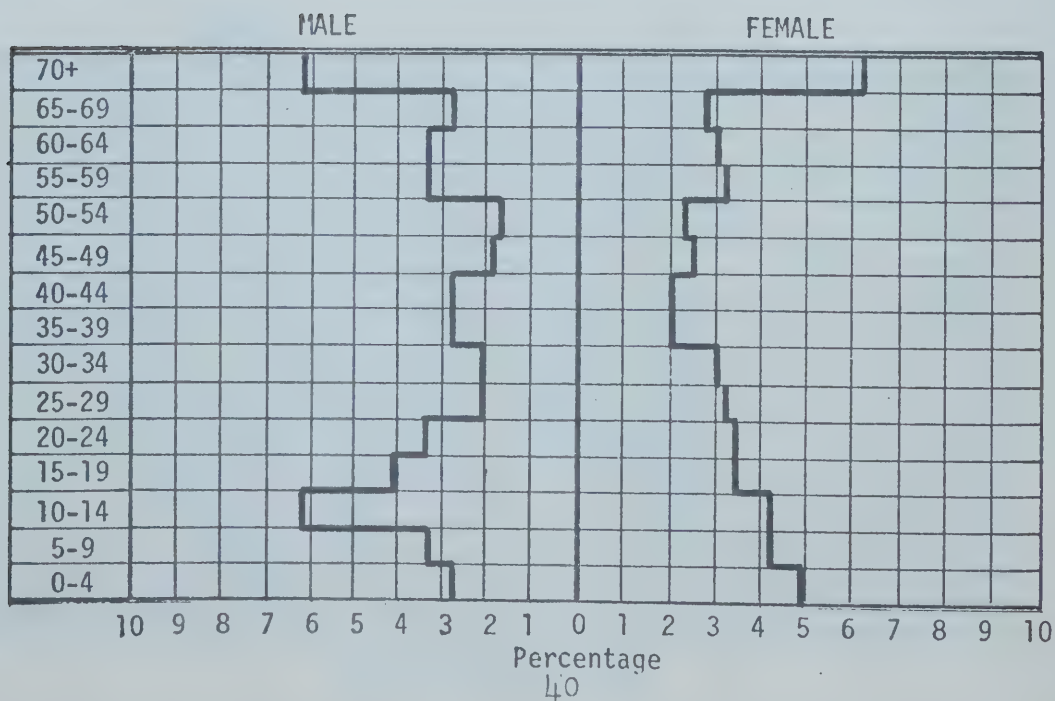
Males $\frac{2050}{4155}$ (number) $\frac{49.34}{100.00}$ (percent)
 Females $\frac{2105}{4155}$ (number) $\frac{50.66}{100.00}$ (percent)
 Total
 Population(N) $\frac{4155}{4155}$ (number) $\frac{100.00}{100.00}$ (percent)



Population of SETTLE COUNTS: VILLAGES....., 71..(year)

Age	Male	Percent	Female	Percent
70+	45	6.25	45	6.25
65-69	20	2.78	20	2.78
60-64	25	3.47	22	3.05
55-59	25	3.47	23	3.19
50-54	12	1.67	17	2.36
45-49	13	1.81	18	2.50
40-44	20	2.78	15	2.08
35-39	20	2.78	15	2.08
30-34	15	2.08	22	3.05
25-29	15	2.08	23	3.19
20-24	25	3.47	25	3.47
15-19	30	4.17	25	3.47
10-14	45	6.25	30	4.17
5-9	25	3.47	30	4.17
0-4	20	2.78	35	4.86
Total	355	49.31	365	50.67

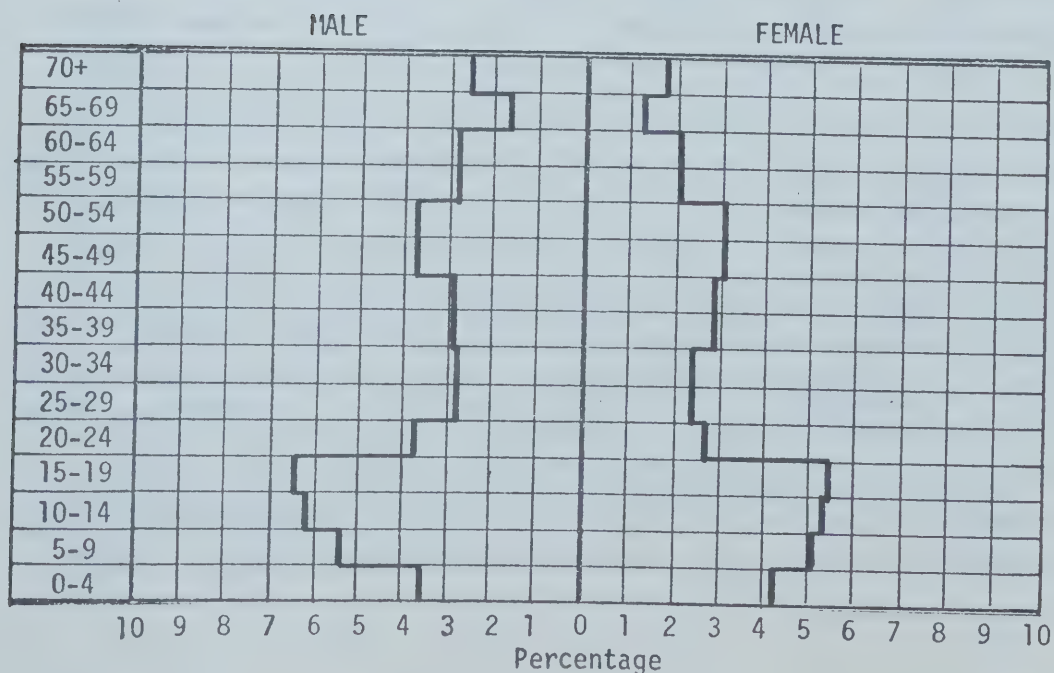
Males 355 (number) 49.31 (percent)
 Females 365 (number) 50.67 (percent)
 Total
 Population(N) 720 (number) 100.00 (percent)



Population of .STETTLER..COUNTY:..RESIDUAL...71...(year)

Age	Male	Percent	Female	Percent
70+	125	2.51	80	1.61
65-69	80	1.61	60	1.21
60-64	142	2.85	100	2.01
55-59	143	2.87	100	2.01
50-54	182	3.66	150	3.01
45-49	183	3.68	150	3.01
40-44	145	2.91	137	2.75
35-39	145	2.91	138	2.77
30-34	135	2.71	120	2.41
25-29	135	2.71	120	2.41
20-24	185	3.72	130	2.61
15-19	325	6.53	270	5.43
10-14	320	6.43	265	5.33
5-9	270	5.43	250	5.03
0-4	180	3.62	210	4.22
Total	2695	54.15	2280	45.82

Males 2695 (number) 54.17 (percent)
 Females 2280 (number) 45.83 (percent)
 Total Population(N) 4975 (number) 100.00 (percent)



occupy 87.95 percent of all the farmland--up from 82.43 percent in 1966. Thus, there are fewer farmers but their incomes are higher. Stettler County population density is 6.303 persons per square mile.

Of the total population, 87.41 percent speak English as their mother tongue. Ethnic origins in order of prevalence are the British Isles, Germany, Scandinavia, France and the Ukraine. As stated earlier, the major towns--Stettler, Botha, Big Valley, and Donalda--are characterized by aging populations. Rapid future growth seems unlikely in Stettler County. In general, the county can be classified as a mixed farming economy (straw, wheat, barley, oats, rye, dairy products, poultry products, horses, cattle, sheep, hogs and honey). Commercial deposits of coal, sulphur, sand/gravel, petroleum and natural gas are also found in the area.

Kneehill Municipal District Number 48

The total population of Municipal District No. 48 has remained relatively stable over the years. Most towns and villages can now be classified as residential and retirement centers. Only a normal growth pattern can be expected. The farm population is on the decline, contributing 45.11 percent of the total population. This is down from 67.27 percent in 1966. However, the actual number of acres farmed has increased. The number of census farms with sales of \$5,000 or more also is declining--from 81.32 percent of all census farms in 1966 to 76.64 percent in 1971. Along with the decline in these higher income farms is the decreasing percentage of farmland. In turn, the declining farm population and lower incomes affects the towns and villages. The effects are seen in the towns and villages of Linden, Acme, Carbon, Morrin, Three Hills, Torrington and Trochu. At one time these communities served as important service, shopping and education centers for the surrounding countryside. These

functions are ceasing in importance and the towns are characterized by aging populations. Now their main functions are retirement and residential. Kneehill Municipal District has a population density of 6.875 persons per square mile. Of the people, 80 percent are English speaking. Ethnic origins in order of prevalence are the British Isles, Germany, Netherlands, Scandinavia and France.

Table 11
Population of Kneehill Municipal District
(Number 48), Towns, Villages, and
Residual, 1951, 1956, 1961,
1966 and 1971

Place	1951	1956	1961	1966	1971
Towns					
Three Hills	1,026	1,095	1,491	1,452	1,345
Trochu ¹	630	680	671	780	750
Villages					
Acme	275	292	328	335	285
Carbon	374	354	371	374	330
Linden ²	--	--	--	210	215
Torrington	--	--	--	130	130
Residual	7,174	7,055	7,008	6,290 ¹	5,880
Total	9,479	9,476	9,869	9,571	8,935

¹Annexations to cities, towns and villages: December 30, 1961 and 1965 (from I.D. 42 and 48 Kneehill); Three Hills, December 30, 1961 and 1963; Trochu (village previous to 1962), December 30, 1961 and 1963; Carbon, December 30, 1961 (from Kneehill); Milo, 1964 (from Vulcan County No. 2).

²Linden and Torrington Villages incorporated, 1964 (from Kneehill No. 48).

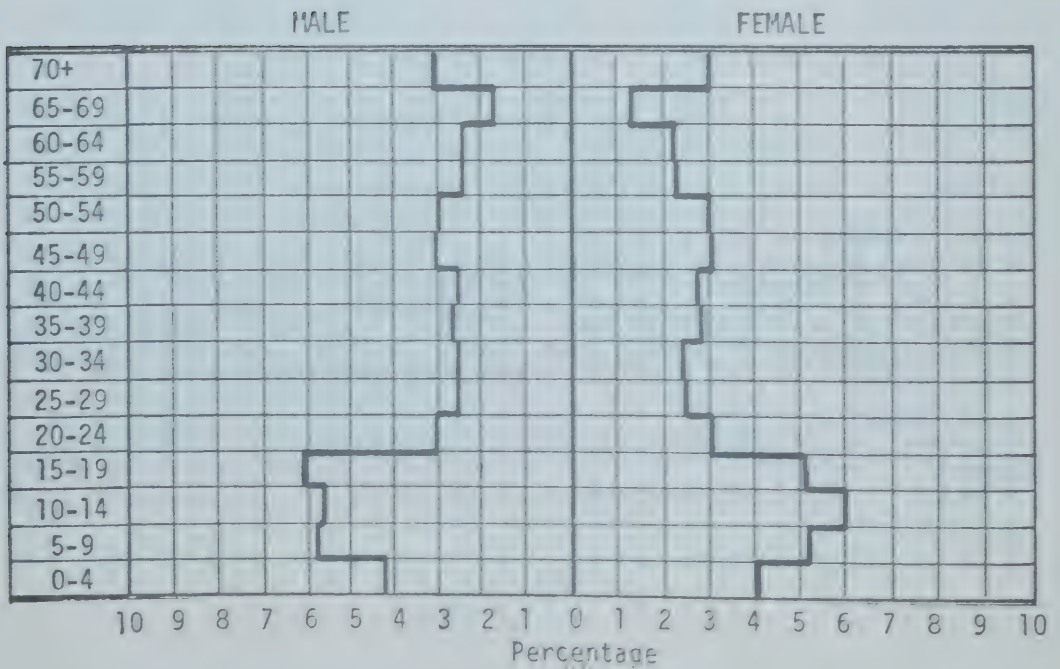
Table 12

Population of Kneehill M.D. 48 (Total, Towns,
Villages, and Residual)

Population of KNEEHILL M.D. 48..TOTAL....., 71..(year)

Age	Male	Percent	Female	Percent
70+	270	3.02	280	3.13
65-69	155	1.73	125	1.40
60-64	216	2.42	206	2.31
55-59	219	2.45	209	2.34
50-54	246	2.79	273	3.06
45-49	269	3.01	277	3.10
40-44	228	2.55	245	2.74
35-39	232	2.60	250	2.80
30-34	223	2.50	215	2.41
25-29	227	2.54	220	2.46
20-24	275	3.08	270	3.02
15-19	545	6.10	460	5.15
10-14	510	5.71	540	6.04
5-9	515	5.76	470	5.26
0-4	375	4.20	370	4.14
Total	4525	50.65	4410	49.36

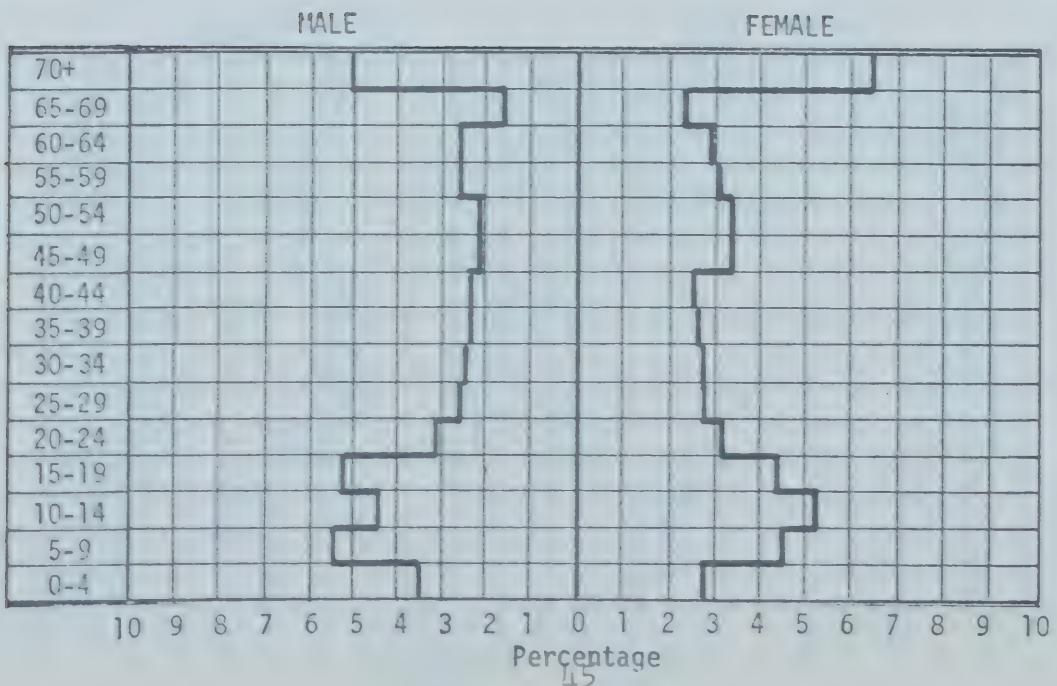
Males $\frac{4525}{\text{number}}$ (number) $\frac{50.64}{\text{percent}}$ (percent)
 Females $\frac{4410}{\text{number}}$ (number) $\frac{49.36}{\text{percent}}$ (percent)
 Total
 Population(N) $\frac{8935}{\text{number}}$ (number) $\frac{100.00}{\text{percent}}$ (percent)



Population of KNEEHILL M.D. 48 TOWNS....., 71 (year)

Age	Male	Percent	Female	Percent
70+	105	5.01	135	6.44
65-69	35	1.67	50	2.39
60-64	55	2.63	62	2.96
55-59	55	2.63	63	3.01
50-54	45	2.15	70	3.34
45-49	45	2.15	70	3.34
40-44	50	2.39	52	2.48
35-39	50	2.39	53	2.53
30-34	52	2.48	57	2.72
25-29	53	2.53	58	2.77
20-24	65	3.10	65	3.10
15-19	110	5.25	90	4.30
10-14	95	4.53	110	5.25
5-9	115	5.49	95	4.53
0-4	75	3.58	60	2.86
Total	1005	47.98	1090	52.02

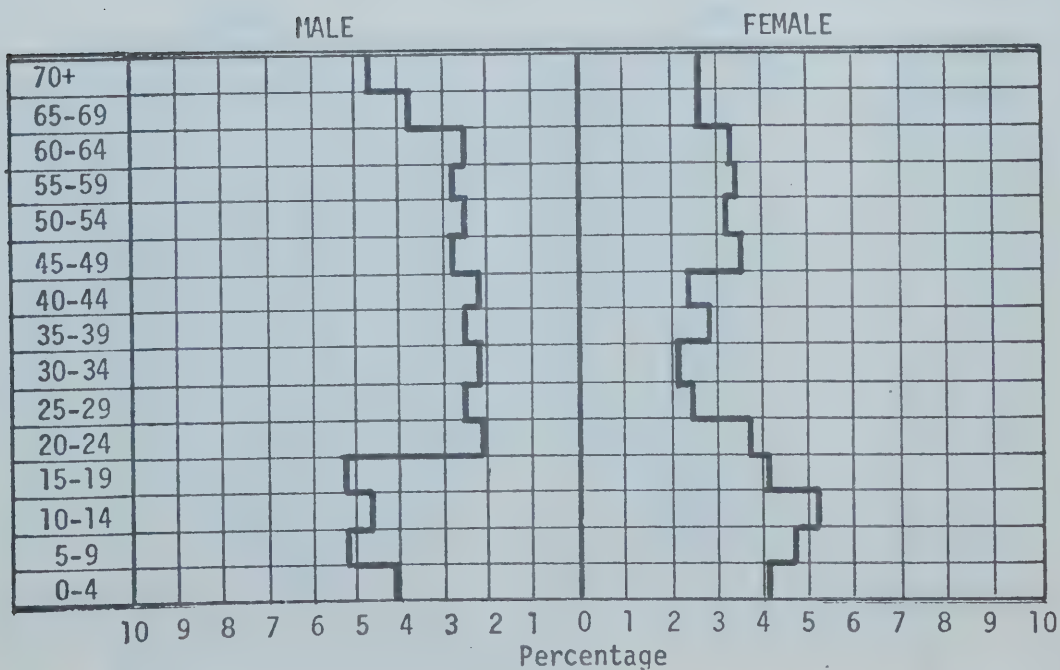
Males 1005 (number) 47.97 (percent)
Females 1090 (number) 52.03 (percent)
Total
Population(N) 2095 (number) 100.00 (percent)



Population of KNEEHILL M.D. 47: VILLAGES....., 71..(year)

Age	Male	Percent	Female	Percent
70+	45	4.69	25	2.60
65-69	35	3.65	25	2.60
60-64	24	2.50	32	3.33
55-59	26	2.71	33	3.44
50-54	24	2.50	31	3.23
45-49	26	2.71	34	3.54
40-44	21	2.19	23	2.39
35-39	24	2.50	27	2.81
30-34	21	2.19	21	2.19
25-29	24	2.50	24	2.50
20-24	20	2.08	35	3.65
15-19	50	5.21	40	4.17
10-14	45	4.69	50	5.21
5-9	50	5.21	45	4.69
0-4	40	4.17	40	4.17
Total	475	49.50	485	50.52

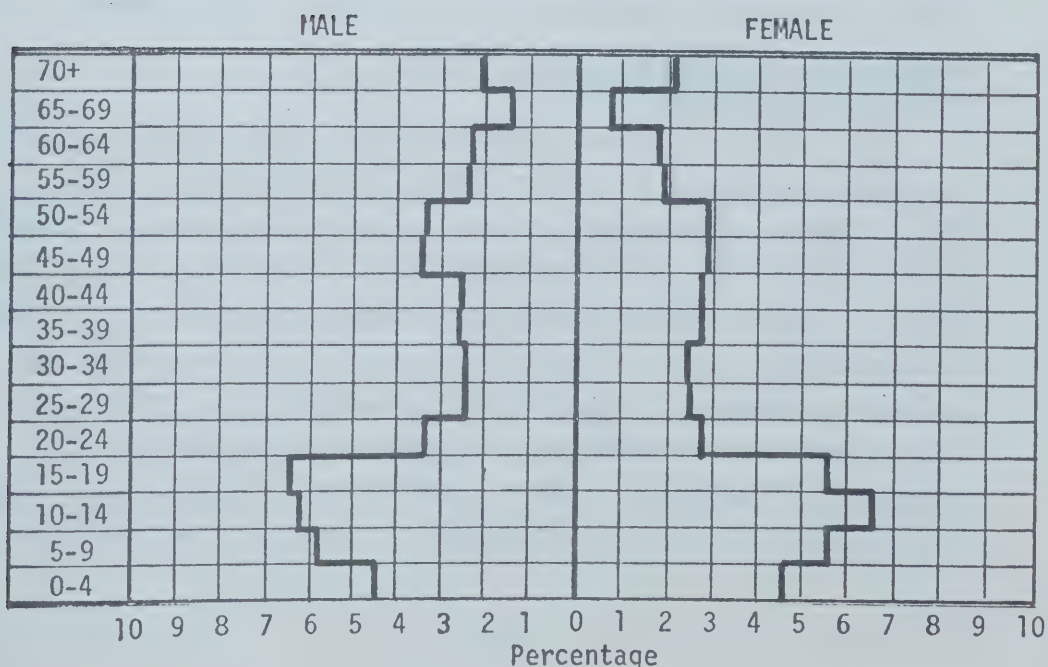
Males 475 (number) 49.48 (percent)
 Females 485 (number) 50.52 (percent)
 Total
 Population(N) 960 (number) 100.00 (percent)



Population of KNEEHILL, MD. 48... RESIDUAL..... fl. (year)

Age	Male	Percent	Female	Percent
70+	120	2.04	120	2.04
65-69	85	1.45	50	0.85
60-64	137	2.33	112	1.90
55-59	138	2.35	113	1.92
50-54	197	3.35	172	2.93
45-49	198	3.37	173	2.94
40-44	157	2.67	170	2.89
35-39	158	2.69	170	2.89
30-34	150	2.55	137	2.33
25-29	150	2.55	138	2.35
20-24	190	3.23	170	2.89
15-19	385	6.55	330	5.61
10-14	370	6.29	380	6.46
5-9	350	5.95	330	5.61
0-4	260	4.42	270	4.59
Total	3045	51.79	2835	48.20

Males $\frac{3045}{2835}$ (number) $\frac{51.79}{48.21}$ (percent)
 Females $\frac{2835}{48.21}$ (percent)
 Total
 Population(N) $\frac{5880}{100.00}$ (number) $\frac{100.00}{}$ (percent)



Starland Municipal District Number 47

The total population of Starland Municipal District has been on the decline over the past two decades. This is mainly because the farm population is the major contributor. This rural population, along with the rural population in the province, is declining. Consequently, the small farm towns and villages are suffering. Rumsey has a declining population. It functions as a retirement and stop-off center. Munson and Delia can be characterized as residential and retirement centers. Their populations have remained stable. Future growth is unlikely. The 1966 and 1971 censuses showed that 83.91 and 84.08 percent, respectively, of the population lived on census farms. The actual number of census farms and the area of census farms is on the decline. Along with this is a decline of census farms with sales of \$5,000 or more. This segment accounts for 76.64 percent of all census farms, and they occupy 90.11 percent of all the farm acreage. Thus it is evident that the main population is made up of rural persons. The population density is 4.52 persons per square mile. Of the total population, 79.9 percent are English speaking. Ethnic origins in order of prevalence are the British Isles, Germany, Netherlands, Scandinavia and France.

Population Characteristics of Part of Improvement District 10

The part of Improvement District 10 we are studying can best be described by looking at enumeration areas. The village of Caroline is the only incorporated community within this area. One disadvantage of using enumeration areas is that their boundaries change drastically between censuses and it is virtually impossible to compare data between censuses. Enumeration area data for 1971 indicate that farms and unincorporated places represent 89.3 percent of the total area's population. Hence, the people in the area around the village of Caroline can be classified

Table 13
Population of Starland Municipal District
(Number 47), Towns, Villages, and
Residual, 1951, 1956, 1961,
1966 and 1971

Place	1951	1956	1961	1966	1971
Villages					
Craigmyle	136	138	107	98	65
Delia	278	282	287	274	235
Morrin	226	267	316	272	195
Munson	78	82	82	39	70
Rumsey	110	104	123	108	105
Residual	2,891	2,831	2,907	2,535 ¹	2,205
Total	3,719	3,704	3,822	3,326	2,875

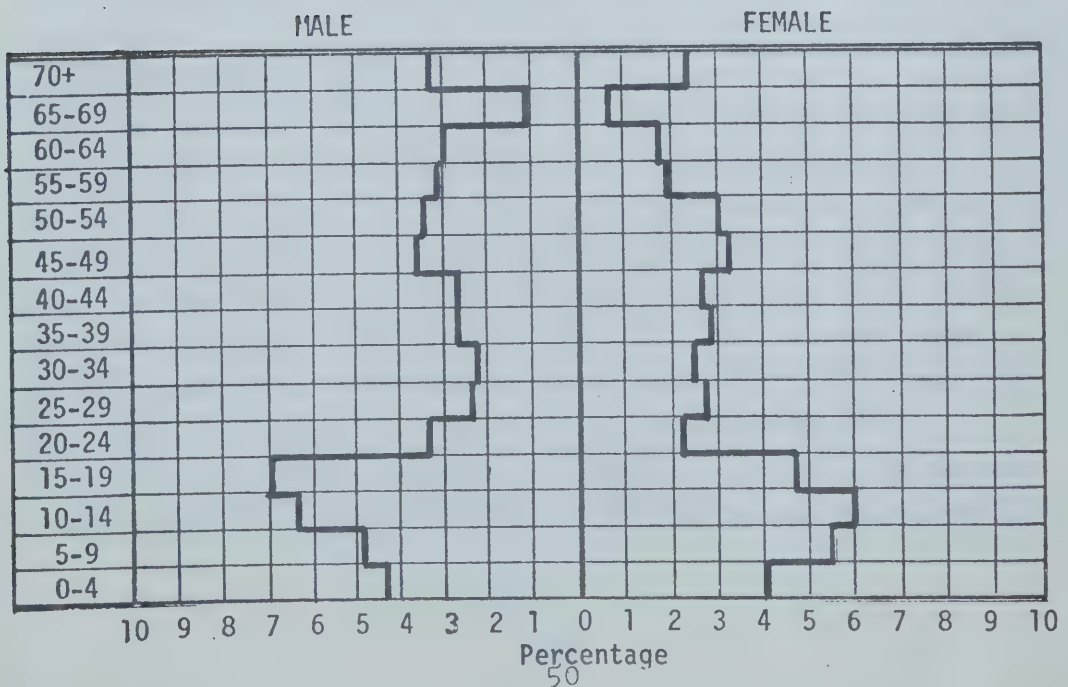
¹Small part of I.D. 42 annexed to Starland, No. 47, 1965.

Table 14
Population of Starland M.D. 47 (Total,
Villages, and Residual)

Population of STARLAND...M.D. 47...TOTAL...., 71..(year)

Age	Male	Percent	Female	Percent
70+	95	3.30	70	2.43
65-69	30	1.04	20	0.30
60-64	86	2.99	53	1.84
55-59	89	3.10	57	1.98
50-54	98	3.41	90	3.13
45-49	102	3.55	95	3.30
40-44	74	2.57	75	2.61
35-39	76	2.64	80	2.78
30-34	66	2.30	73	2.54
25-29	69	2.40	77	2.68
20-24	95	3.30	65	2.26
15-19	200	6.96	135	4.70
10-14	185	6.43	175	6.09
5-9	140	4.87	160	5.57
0-4	125	4.35	120	4.17
Total	1530	53.21	1345	46.78

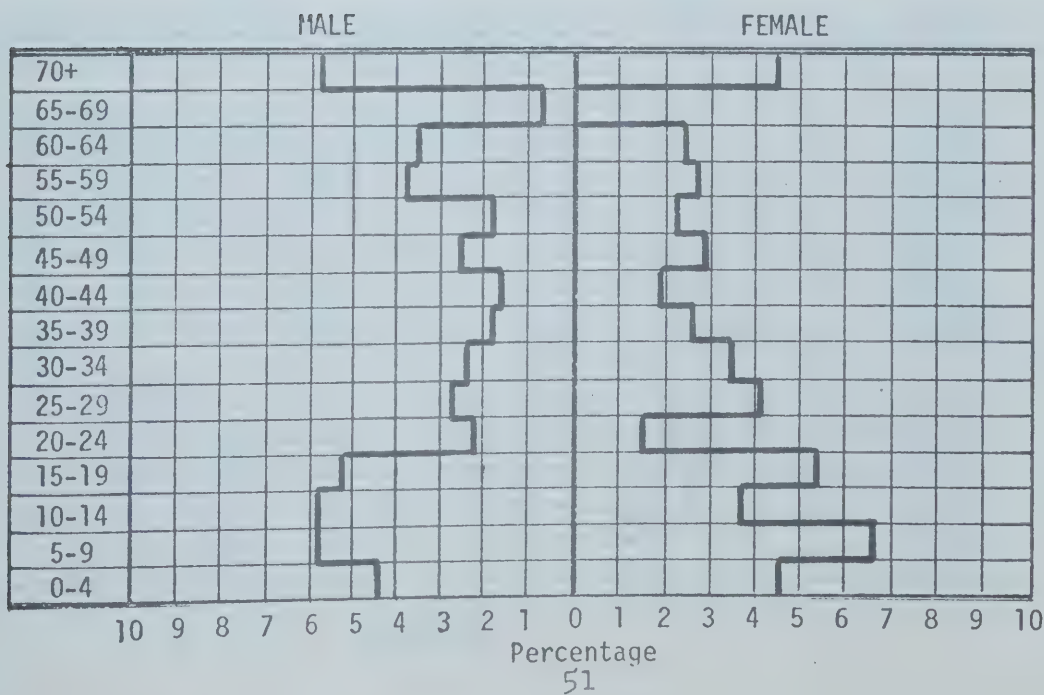
Males 1530 (number) 53.22 (percent)
 Females 1345 (number) 46.78 (percent)
 Total
 Population(N) 2875 (number) 100.00 (percent)



Population of STARLAND, MD. 47: VILLAGES....., 71..(year)

Age	Male	Percent	Female	Percent
70+	40	5.97	30	4.48
65-69	5	0.75	0	0.00
60-64	24	3.58	16	2.39
55-59	26	3.88	19	2.84
50-54	13	1.94	15	2.24
45-49	17	2.54	20	2.99
40-44	12	1.79	13	1.94
35-39	13	1.94	17	2.54
30-34	16	2.39	23	3.43
25-29	19	2.84	27	4.03
20-24	15	2.24	10	1.49
15-19	35	5.22	35	5.22
10-14	40	5.97	25	3.73
5-9	40	5.97	45	6.72
0-4	30	4.48	30	4.48
Total	345	51.50	325	48.52

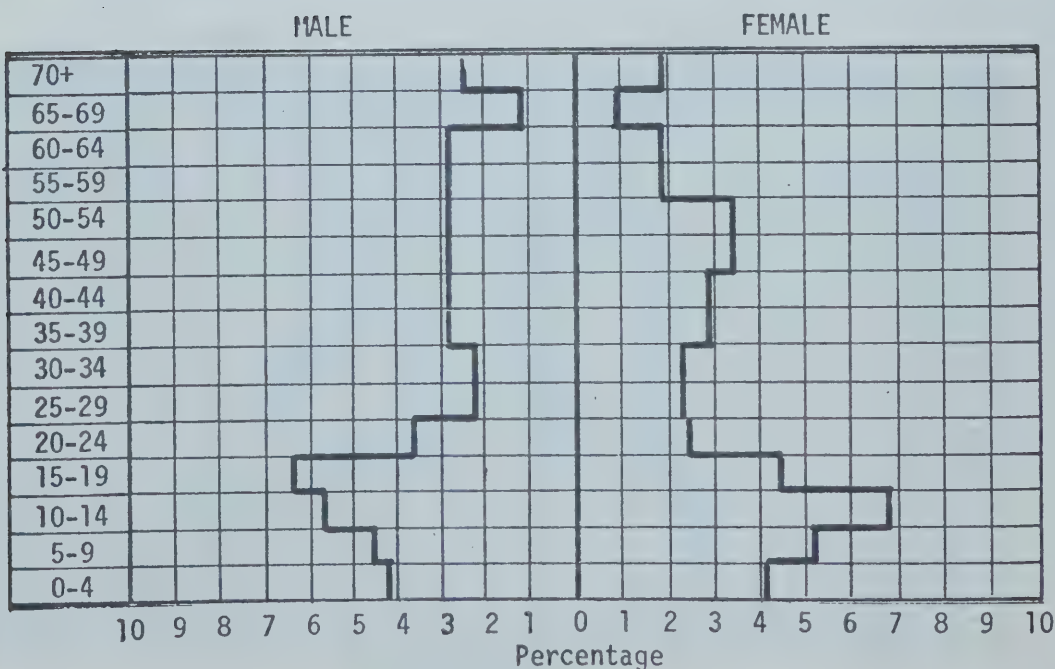
Males 345 (number) 51.49 (percent)
 Females 325 (number) 48.51 (percent)
 Total
 Population(N) 670 (number) 100.00 (percent)



Population of STARLAND, M.D. 47... RESIDUAL..., 71.. (year)

Age	Male	Percent	Female	Percent
70+	55	2.49	40	1.81
65-69	25	1.13	20	0.91
60-64	62	2.81	37	1.68
55-59	63	2.86	38	1.72
50-54	85	3.85	75	3.40
45-49	85	3.85	75	3.40
40-44	62	2.81	62	2.81
35-39	63	2.86	63	2.86
30-34	50	2.27	50	2.27
25-29	50	2.27	50	2.27
20-24	80	3.63	55	2.49
15-19	165	7.48	100	4.54
10-14	145	6.58	150	6.80
5-9	100	4.54	115	5.22
0-4	95	4.31	90	4.08
Total	1185	53.74	1020	46.26

Males $\frac{1185}{1020}$ (number) $\frac{53.74}{46.26}$ (percent)
 Females
 Total
 Population(N) $\frac{2205}{100.00}$ (number) (percent)



as rural. Caroline itself contributes only 8.3 percent of the total population.

Since Caroline is the only community within the area that has population characteristics data, it will have to be indicative of the area being studied. Approximately 54 percent of the population is male--typical of largely rural areas. The majority of the population falls between 15 and 55. Thus it appears to be a fairly young population that can be expected to increase. Caroline is by no means a growth or retirement center; however, since it is the only village of substantial size in the area, it may have some importance as a trade center. Other data on Caroline are likely to be indicative of the entire study area in Improvement District 10. Of Caroline's population, 89.9 percent speak English. Ethnic origins in order of prevalence are the British Isles, Germany, and Scandinavia. The townsite of Caroline occupies .25 square miles and has a population density of 1,356 persons per square mile. Thus, in summary, this part of Improvement District 10 can be classified as rural. Consistent with the rest of the province, its rural population is likely on the decline. Caroline can be expected to grow in the future. There are no other indications of future growth, retirement, or trade centers within this area.

Improvement District Number 7

This area includes the city of Drumheller and several unincorporated communities. The total area has a population of 7,295 of which Drumheller contributes 74.6 percent. Therefore, by looking at the city of Drumheller, the best indications of growth changes can be obtained and predictions can be made.

Drumheller can be classified as a growth center. It has a large base, indicating many young children and probable future growth. About 13 percent of the city's

Table 15
Population of Part of Improvement District
Number 10, 1951, 1956, 1961,
1966 and 1971

Place	1951 ¹	1956 ¹	1961	1966	1971
Villages					
Caroline	--	--	321	294	350
Residual	--	--	3,500	3,264	3,870
Total	--	--	3,821	3,558	4,220

¹No information.

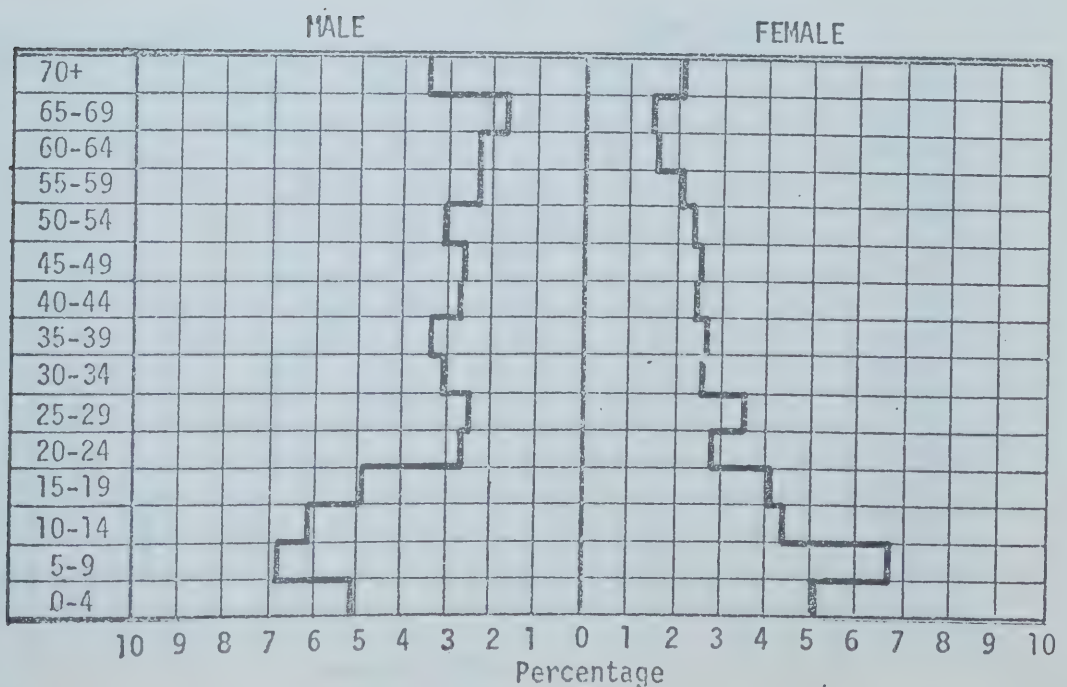
Table 16.

Population of I.D. 10 (Part) (Total, Villages and Residual)

Population of I.D. 10 (PART) TOTAL....., 71 (year)

Age	Male	Percent	Female	Percent
70+	145	3.44	90	2.13
65-69	45	1.78	60	1.42
60-64	100	2.37	90	1.66
55-59	100	2.37	90	2.13
50-54	130	3.08	100	2.37
45-49	115	2.72	105	2.49
40-44	120	2.84	100	2.37
35-39	140	3.32	115	2.73
30-34	130	3.08	110	2.61
25-29	105	2.49	150	3.55
20-24	120	2.84	120	2.84
15-19	210	4.98	170	4.03
10-14	260	6.16	185	4.38
5-9	290	6.87	285	6.75
0-4	215	5.09	215	5.09
Total	2255	53.43	1965	46.55

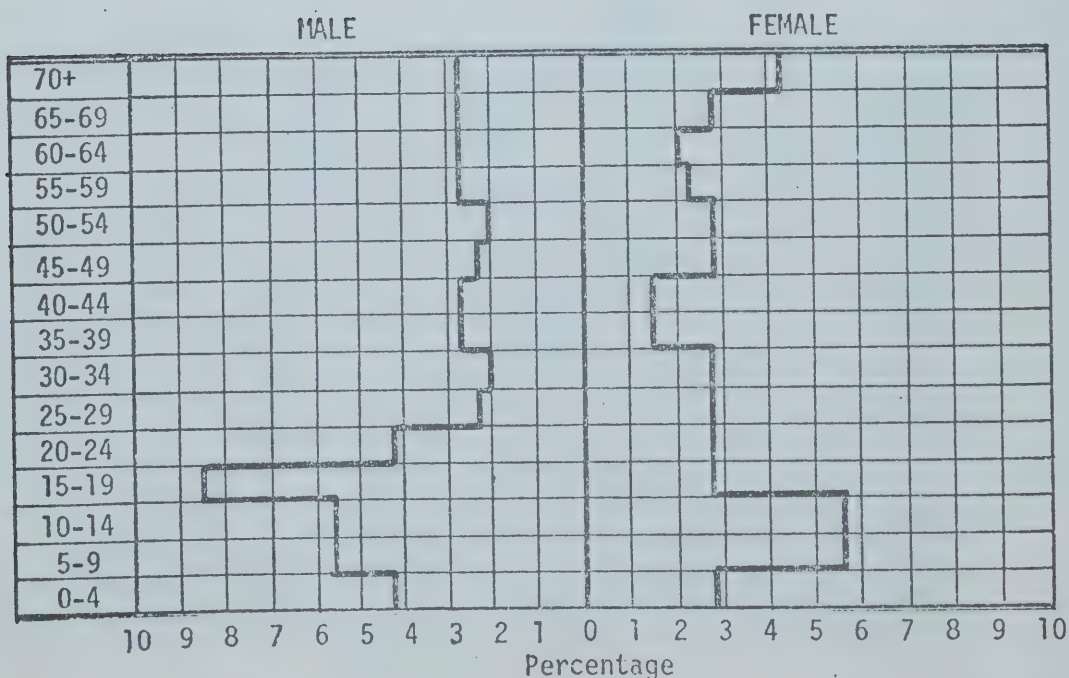
Males $\frac{2255}{1965}$ (number) $\frac{53.44}{46.55}$ (percent)
 Females $\frac{1965}{1965}$ (number) $\frac{46.55}{46.55}$ (percent)
 Total $\frac{4220}{4220}$ (number) $\frac{100.00}{100.00}$ (percent)
 Population(N) $\frac{4220}{4220}$ (number) $\frac{100.00}{100.00}$ (percent)



Population of I.D.10 (PART) VILLAGES.....,71..(year)

Age	Male	Percent	Female	Percent
70+	10	2.86	15	4.28
65-69	10	2.86	10	2.86
60-64	10	2.86	7	2.00
55-59	10	2.86	8	2.28
50-54	7	2.00	10	2.86
45-49	8	2.28	10	2.86
40-44	10	2.86	5	1.43
35-39	10	2.86	5	1.43
30-34	7	2.00	10	2.86
25-29	8	2.28	10	2.86
20-24	15	4.29	10	2.86
15-19	30	8.57	10	2.86
10-14	20	5.71	20	5.71
5-9	20	5.71	20	5.71
0-4	15	4.29	10	2.86
Total	190	54.29	160	45.72

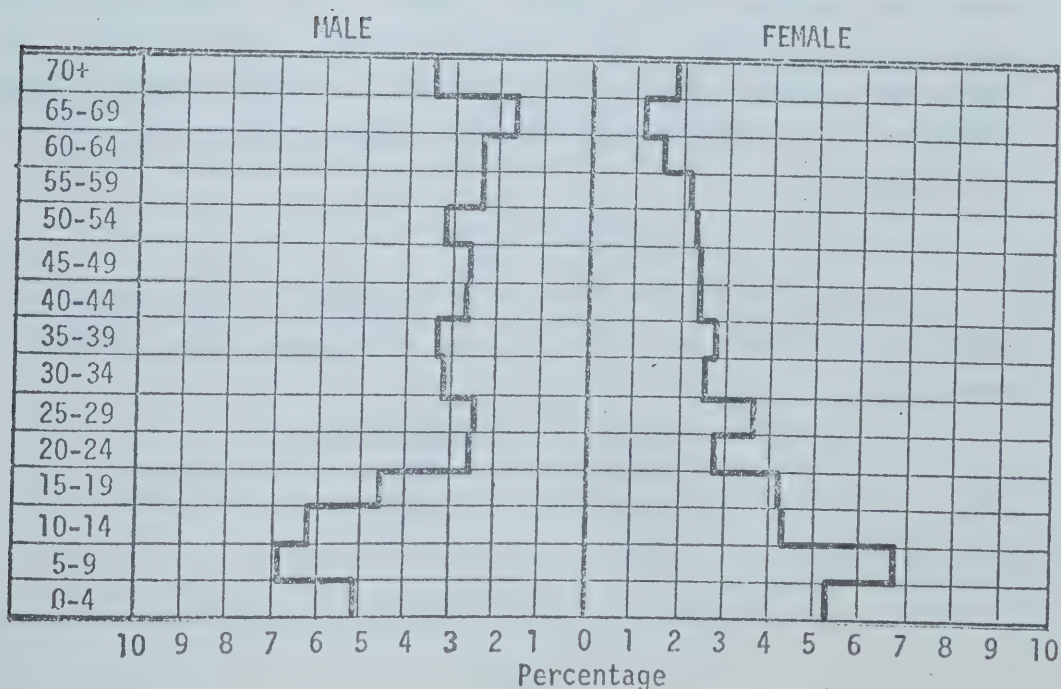
Males 190 (number) 54.29 (percent)
 Females 160 (number) 45.71 (percent)
 Total
 Population(N) 350 (number) 100.00 (percent)



Population of T.D.10 (PART) ... RESIDUAL ... 71. (year)

Age	Male	Percent	Female	Percent
70+	135	3.49	75	1.94
65-69	63	1.68	50	1.29
60-64	90	2.33	63	1.63
55-59	90	2.33	82	2.12
50-54	123	3.18	90	2.33
45-49	107	2.76	95	2.45
40-44	110	2.84	95	2.45
35-39	130	3.36	110	2.84
30-34	123	3.18	100	2.58
25-29	97	2.51	140	3.62
20-24	105	2.71	110	2.84
15-19	180	4.65	160	4.13
10-14	240	6.20	165	4.26
5-9	270	6.98	265	6.85
0-4	200	5.17	205	5.30
Total	2065	53.37	1805	46.63

Males $\frac{2065}{1805}$ (number) $\frac{53.36}{46.64}$ (percent)
 Females $\frac{1805}{1805}$ (number) $\frac{46.64}{46.64}$ (percent)
 Total $\frac{2065}{1805}$ (number) $\frac{53.36}{46.64}$ (percent)
 Population (N) $\frac{3870}{100.00}$ (number) $\frac{100.00}{100.00}$ (percent)



population is over age 65; therefore, it also is an important retirement center. About 28 percent of the population is of school age, and 35 percent is found in the working force. The average age in the community is 29 which indicates a youthful population. The trading area of Drumheller has a 30 mile radius around the city. The population of the entire trading area in 1971 was 16,260, down negligibly from the 1966 population. The 1973 population of Drumheller was 5,888, an increase of 8.12 percent from 1971. This indicates probable future growth. In summary, Drumheller can be considered an important growth center, retirement center and trade center.

The unincorporated places in the special area contribute 12.33 percent of the area's population. The hamlets of East Coulee and Nacmine are the largest of these. East Coulee has been declining in population steadily since 1956, whereas Nacmine has remained relatively stable. Wayne and Cambria contribute about 50 persons each. There is no indication of probable future growth of any of these unincorporated places within the special area.

Thus, in summary, the city of Drumheller would be most indicative of the special area's population projections and characteristics. As stated earlier, Drumheller is an important growth center, retirement center and trade center. Chances of it continuing to serve these functions are indicated.

Population Projections

Population projections will be made for the total area only. The population of the study area from 1951 to 1971 was:

<u>Time</u>	<u>Population</u>
1951	82,682
1956	88,734
1961	103,239

Table 17
Population of Improvement District Number 7,
1951, 1956, 1961, 1966 and 1971

Places	1951	1956	1961	1966	1971
Cities					
Drumheller	2,601	2,632	2,931	3,574	5,445
Residual	6,925	5,502	4,370	3,403	1,850
Total	9,526	8,135	7,301	6,977	7,295

Note: Parts of Improvement District Number 7 (I.D. Number 42 until 1969) annexed to Municipal District 47 (Starland) in 1965; to Drumheller City December 30, 1961 and in 1965 and 1967.

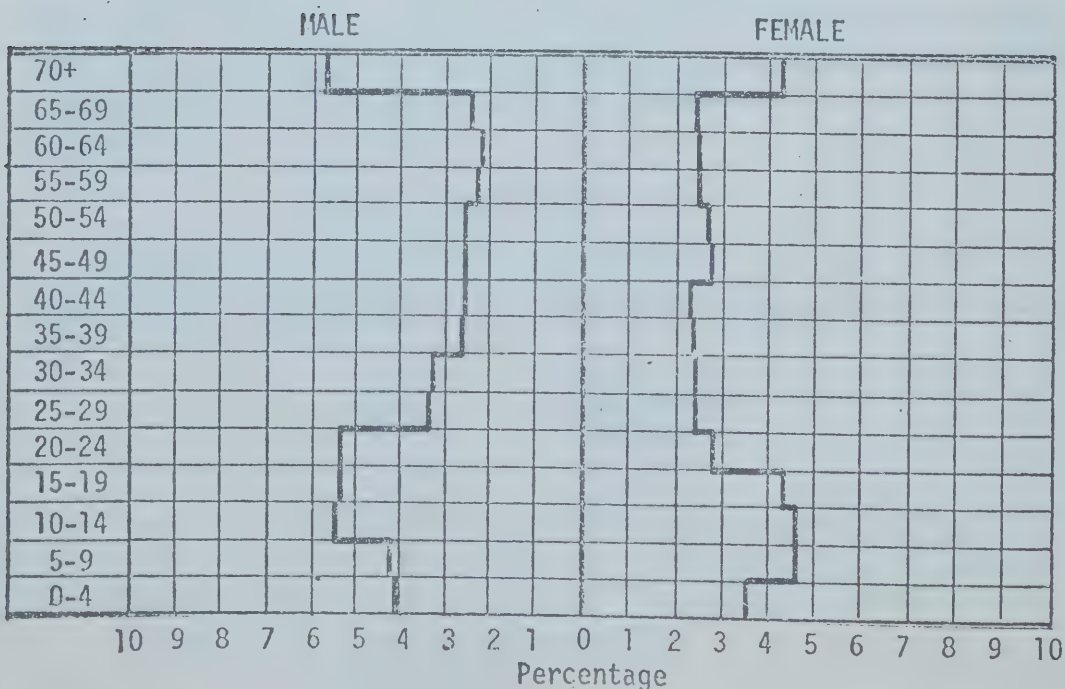
Table 18

Population of I.D. 7 (Total, Cities, and Residual)

Population of I.D. 7...TOTAL.....,71..(year)

Age	Male	Percent	Female	Percent
70+	425	5.83	315	4.32
65-69	180	2.47	170	2.33
60-64	157	2.15	180	2.47
55-59	158	2.17	180	2.47
50-54	185	2.53	202	2.77
45-49	185	2.53	203	2.78
40-44	187	2.56	164	2.25
35-39	188	2.58	166	2.27
30-34	237	3.25	167	2.29
25-29	238	3.26	168	2.30
20-24	385	5.28	210	2.88
15-19	385	5.28	320	4.39
10-14	400	5.48	340	4.66
5-9	305	4.18	340	4.66
0-4	295	4.04	260	3.56
Total	3910	53.59	3385	46.40

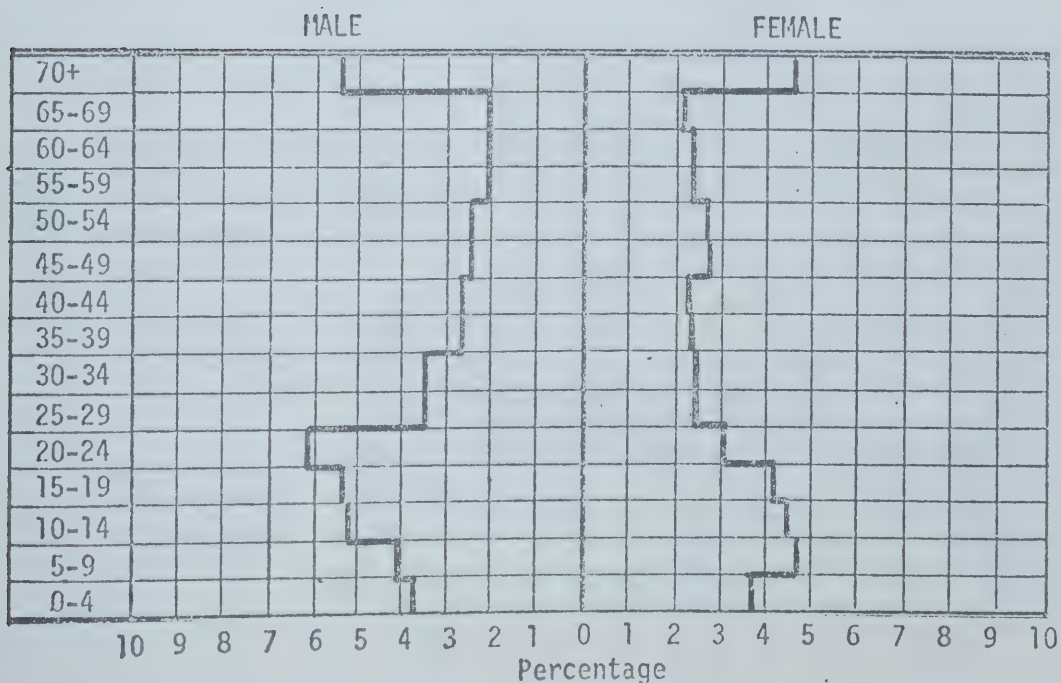
Males 3910 (number) 53.60 (percent)
 Females 3385 (number) 46.40 (percent)
 Total
 Population(N) 7295 (number) 100.00 (percent)



Population of T.O. F. CITIES....., 71. (year)

Age	Male	Percent	Female	Percent
70+	290	5.33	255	4.68
65-69	110	2.02	115	2.11
60-64	110	2.02	130	2.39
55-59	110	2.02	130	2.39
50-54	135	2.48	152	2.79
45-49	135	2.48	153	2.81
40-44	145	2.66	122	2.24
35-39	145	2.66	123	2.26
30-34	192	3.53	130	2.39
25-29	193	3.54	130	2.39
20-24	335	6.15	165	3.03
15-19	290	5.33	230	4.22
10-14	285	5.23	245	4.50
5-9	220	4.04	260	4.77
0-4	210	3.96	200	3.67
Total	2905	53.35	2540	46.64

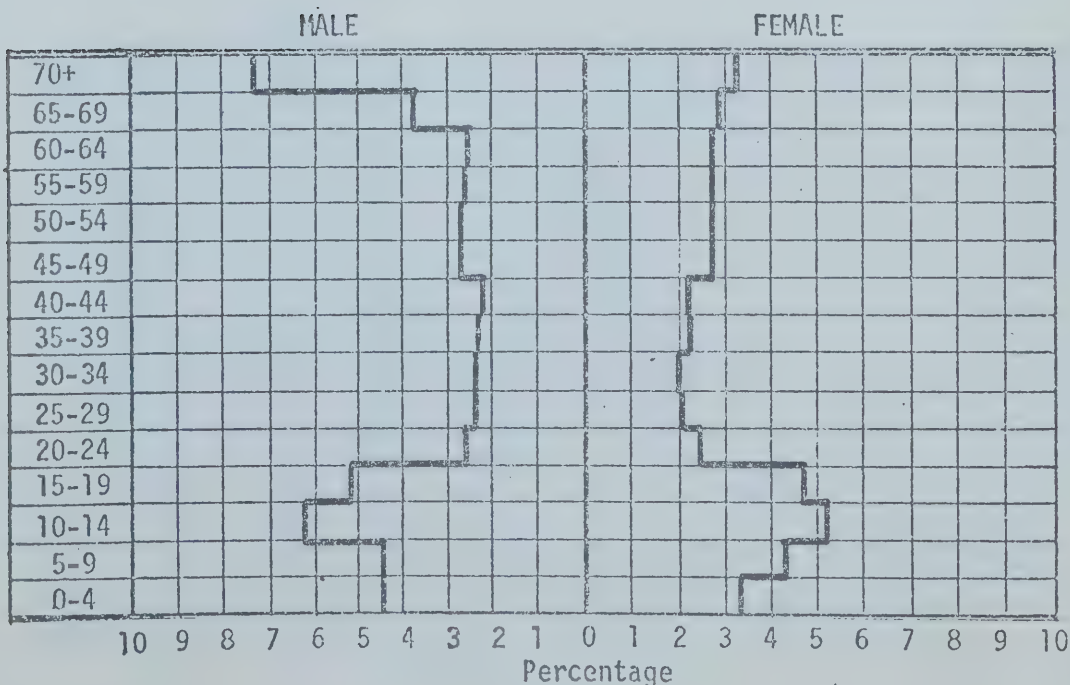
Males 2905 (number) 53.35 (percent)
 Females 2540 (number) 46.65 (percent)
 Total
 Population(N) 5445 (number) 100.00 (percent)



Population of I.D. 7... RESIDUAL..... 71.. (year)

Age	Male	Percent	Female	Percent
70+	135	7.30	60	3.24
65-69	70	3.78	55	2.97
60-64	47	2.54	50	2.70
55-59	48	2.59	50	2.70
50-54	50	2.70	50	2.70
45-49	50	2.70	50	2.70
40-44	42	2.27	42	2.27
35-39	43	2.32	43	2.32
30-34	45	2.43	37	2.00
25-29	45	2.43	38	2.05
20-24	50	2.70	45	2.43
15-19	95	5.13	90	4.86
10-14	115	6.22	95	5.13
5-9	85	4.59	80	4.32
0-4	85	4.59	60	3.24
Total	1005	54.29	845	45.63

Males $\frac{1005}{845}$ (number) $\frac{54.32}{45.68}$ (percent)
 Females
 Total
 Population(N) $\frac{1850}{100.00}$ (number) (percent)



<u>Time</u>	<u>Population</u>
1966	108,354
1971	109,925

Regression formulas were used to project population growth. The relationship between population and time was analyzed. The first analysis used a two variable linear regression equation.

$$y = a + bx$$

where: y = population of study area,
a = the constant (y intercept),
b = the slope of the regression line, and
x = time.

Utilizing our data we found that:

a = -2,807,850.52, and

b = 1,482.12 --which indicates that
for every one-year increase in time, the population of the
area increases by 1,482.12.

Solving for various values of x (dates), we find that:

<u>Date</u>	<u>Projected Population (linear)</u>
1976	120,819
1981	128,229
1986	135,640
1991	143,050
1996	150,461
2001	157,872

The second regression formula utilized was a growth rates analysis. Here we used a linear regression form with logarithms.

Formula:

$$\log Y = a + b \log X$$

where: Y = population of study area,
a = the constant (Y intercept),
b = the slope of regression line, and
X = time.

. Utilizing our data we found that:

$$a = -94.3907$$

$$b = 30.1845$$

Solving for various values of X we found that:

<u>Date</u>	<u>Projected Population (log)</u>
1976	123,305
1981	133,079
1986	143,600
1991	154,923
1996	167,107
2001	180,216

Population projections were also made based upon assumptions of economic base changes. These ranged from 150,333 to 226,196. For further information concerning these figures, refer to the Area Economic Base Study section of the report.

Conclusions

The population of the study area has increased. This increase has been largely due to the growth of the city of Red Deer. The rural population has declined. Further rural decline is likely to take place within the rural-nonfarm sector of the population. This sector includes the smaller towns and villages and non-incorporated places. The rural farm population will most likely stabilize and level off in the near future.

Economic Base



AREA ECONOMIC BASE STUDY

Introduction

The construction of a dam on the Red Deer River would have an impact upon the economic base of the area. This section of the report will analyze aspects of the economic base of the area and examine some of the possible effects of the proposed development. Attitudes of those surveyed by the Red Deer Regional Planning Commission towards the proposed dam and possible industrial development are examined. A review of what industrialization has meant to other areas is presented and is compared with what might occur in the study area.

Economic Base

An economic base study of an area consists of determining those activities which provide employment. The employment in an area is divided between basic and non-basic activities. Basic employment produces goods and services which are sold outside the boundaries of the area. Non-basic employment serves the needs of the population in the area.

There appears to be a direct relationship between basic and non-basic employment. As employment expands in the basic activities, it also expands in the non-basic activities. Similarly, as employment declines in basic activities there is a decline in employment in non-basic activities. In essence, the basic activities appear to be the prime movers of the economy in an area.

Places within the Province of Alberta have experienced economic base shifts. In its September 1967 population bulletin, the Provincial Planning Board of the Department of Municipal Affairs documents the population changes that occurred in the Coal Branch area of Alberta. This area south

of Edson and Hinton experienced a decline in population as a result of a shift away from an economy based upon energy produced by coal to one based on the energy of petroleum.

Another aspect of decline of basic employment is the decline in the number of farms in the province. The Alberta Department of Agriculture, in its Summer, 1972 issue of the Alberta Farm Economist, stated that the number of farms in Alberta had declined 9.7 percent during the period 1966 to 1971. While the number of farms have been decreasing, the size of farms have been increasing. In terms of employment, as the number of farmers (basic employment) in an area decline and if they are not replaced with some other basic employment, the number of people employed in the non-basic activities will also decline. This is apparent to those who have traveled in rural Alberta. Many small centers established to meet the needs of the population in their areas are declining because of the decline in the farm population (basic employment).

Objectives of the Study

Our purpose in this part of the study is to attempt to establish the economic base of the area under investigation. The study area consists of Lacombe County, Red Deer County, Mountain View County, Stettler County, Starland Municipal District, Kneehill Municipal District, Improvement District No. 7, and part of Improvement District No. 10.

Another objective of our study is to attempt to assess what might happen in the area if changes take place in its basic employment structure.

Methods of Study

The major task one faces in approaching an economic base study is the delineation of the area to be studied. If one selects a city, one will expect that basic employment will be high. As the unit of analysis becomes larger,

many of the basic activities will become non-basic.

In our approach we selected two indirect measures of the economic base. The first method to be utilized is the assumption approach. In this approach the structure of the economy for the area is established. Occupational groupings are established and an arbitrary assumption is made regarding which groupings are basic and which are non-basic. The most common assumption is that all manufacturing and agricultural occupations are basic and the remainder are non-basic.

The limitation of this approach is that it does not differentiate between the activities in other occupational groupings that are basic and that it places total employment in agricultural and manufacturing groups in the basic category. This can, of course, lead to error.

The other approach is the location quotients approach. This method is sometimes known as a measure of area specialization. If in a given area there is a high concentration of employment in a particular industry the employment in that industry is presumed to be basic. For occupational groupings where the area employment differs from the occupational groupings of the "base" comparison area, the assumption is that if employment is higher, it is a basic activity; if lower, it is a non-basic activity. Tiebout suggests that persons using this approach use the following formula.

$$\frac{X}{\text{total local employment}} = \frac{\text{national employment in industry } i}{\text{total national employment}}$$

Solving for X would indicate the number of persons employed in industry i in that area if it supplied its own needs. The assumption here is that total national employment serves the needs of the total national population. This would indicate in an economy like our own that our exports and imports were in balance.

person employed in basic employment, there are 2.1154 employed in non-basic employment.

Location Quotient Approach

An examination of Table 20 indicates that the percentage of persons employed in various occupational groupings differs. Selection of the appropriate comparison area for our study was difficult. If Edmonton was selected as the comparison unit, it would imply that the study area resembled it in some ways. A careful examination indicates that this is not so. Likewise, the selection of Canada as the comparison unit also presents problems in that this does not recognize the unique characteristics of the study area. These unique characteristics center around the fact that the study area is largely made up of farms, small centers and two cities (Red Deer and Drumheller). An examination of Table 20 indicates that agriculture is the most important industry in the area in terms of employment.

An analysis of Table 21 indicates that agriculture is the major area in which basic activities are centered in our study area. The deficiencies (imports) range from a rather low .2 percent difference in medical to a high of 9.5 percent in clerical. The comparison is difficult because the study area encompasses a larger geographic area than Edmonton. However, we can compare the labor force composition of both areas.

An analysis of Table 22 indicates that the magnitude of the difference between the study area and Alberta is less than that between the study area and Edmonton. The major difference is still in the agricultural and clerical categories of employment.

The comparison in Table 23 indicates that the major differences remained; that is, clerical is the major non-basic difference and farming is the major basic difference.

The obvious limitation associated with this approach is that it does not recognize the principal of comparative advantage. That is, some areas have an advantage over other areas in what kinds of economic activities take place. Similarly, other areas can be severely restricted in terms of the economic activities available for it to pursue.

The necessary data for the economic base study were taken from the 1971 Enumeration Area print-outs, Census of Canada, and the published census reports. In the 1971 Census of Canada, labor force refers to non-inmates 15 years and over, who, in the week prior to enumeration, worked for pay or profit, helped in unpaid family work, looked for work, were in temporary lay off, or had jobs from which they were temporarily absent because of illness, vacation, strike, etc. Persons doing housework in their own home or volunteer work only are excluded from the labor force. Also excluded are female farm workers who indicated that they helped without pay on a family farm or in a family business for less than 20 hours.

The labor force was divided into occupational groupings. The following tables indicate the occupational groupings for the study area and for comparison areas.

Assumption Approach

In this approach we shall assume that farming, horticulture, animal husbandry, and other primary and processing occupations make up the basic activities and the remaining occupational groups are non-basic. Persons not stating their occupational group were divided into the basic and non-basic employment for the above stated occupational groupings. This division was based upon the ratio of basic to non-basic employment. The total basic employment for the study area is 15,112. Non-basic employment for the study area is 31,968. The ratio of basic to non-basic employment is 2.1154. This indicates that for every

Table 19

1971 Occupational Groupings for Lacombe County (No. 14), Red Deer County (No. 23), Mountain View County (No. 17), Stettler County (No. 6), Starland Municipal District (No. 47), Kneehill Municipal District (No. 48), Improvement District No. 7, and Improvement District No. 10

Occupational Group	Lacombe County	Red Deer County	Mountain View County	Stettler County	Starland M. D.	Kneehill M.D.	I.D. #7	I.D. #10	Total
Managerial, Admin. and Related	115	560	110	130	20	110	75	25	1,145
Teaching and									
Related	240	720	220	200	40	220	105	40	1,785
Medical and Health	160	1,400	120	140	35	155	105	15	2,130
Technical, Art, Social, and Religious	90	595	90	80	15	110	60	30	1,070
Clerical and Related	450	2,370	550	400	60	245	280	75	4,430
Sales	305	2,025	460	450	55	265	305	70	3,935
Service	475	3,040	520	400	110	235	490	135	5,405
Farming, Horticulture, Animal Husbandry	1,910	3,180	2,330	1,705	820	1,545	115	760	12,365
Other Primary	135	370	195	60	10	70	55	120	1,015

Table 19 (Continued)

Occupational Group	Lacombe County	Red Deer County	Mountain View County	Stettler County	Starland M.D.	Kneehill M.D.	I.D. #7	I.D. #10	Total
Processing	125	150	165	60	10	30	45	40	625
Machinery Fabr., Assembly & Repairing	265	995	185	225	35	200	145	40	2,090
Construction Trades	335	1,315	350	195	50	215	200	105	2,765
Transport, Equipment, and									
Operating	135	655	1,425	180	50	135	100	55	2,735
Other	260	805	390	240	65	145	130	100	2,135
Not Stated	495	1,500-	445	315	120	265	160	150	3,450
Total	5,495	19,680	7,555	4,780	1,495	3,945	2,370	1,760	47,080

Table 20

1971 Occupational Groupings for Canada, Alberta, Edmonton and the Study Area

Occupational Group	Canada		Alberta		Edmonton		Study Area	
	No.	%	No.	%	No.	%	No.	%
Managerial, Admin. and Related	372,240	4.3	27,120	3.9	9,990	4.6	1,045	2.4
Teaching and Related	349,295	4.0	28,225	4.0	9,770	4.5	1,640	3.8
Medical and Health	326,555	3.8	27,720	3.9	10,600	4.9	2,010	4.5
Technical, Art, Social, and Religious	417,260	4.8	32,930	4.7	10,805	5.0	980	2.3
Clerical and Related	1,373,565	15.9	100,310	14.2	41,140	19.0	4,075	9.4
Sales	815,740	9.5	66,110	9.4	23,495	10.8	3,560	8.4
Service	969,920	11.2	80,575	11.4	27,160	12.5	4,780	11.5
Farming, Horticulture, Animal Husbandry	512,150	5.9	89,320	12.7	4,915	2.3	11,490	26.3
Other Primary	153,600	1.8	9,740	1.4	1,270	.6	840	2.2
Processing	334,740	3.9	15,180	2.2	5,665	2.6	540	1.3
Machinery, Fabr., Assembly and Repair	875,285	10.1	42,870	6.1	16,435	7.6	1,905	4.4
Construction Trades	568,565	6.6	51,715	7.3	17,615	8.1	2,460	5.9

Table 20 (Continued)

Occupational Group	Canada		Alberta		Edmonton		Study Area	
	No.	%	No.	%	No.	%	No.	%
Transport, Equipment, and Operating	653,105	7.6	64,105	9.1	15,645	7.2	2,580	5.8
Other	167,630	1.9	11,925	1.7	4,150	1.9	1,905	4.5
Not Stated	737,270	8.5	56,305	8.0	18,055	8.0	3,140	7.3
Total	8,626,920	99.8	704,150	100.0	216,710	99.9	42,950	100.0

Table 21

Percentage of the Study Area Labor Force in Basic and
Non-Basic Employment Compared with Edmonton

Occupational Group	Employment	
	Basic ¹	Non-Basic ²
Managerial		2.2
Teaching		.7
Medical		.4
Technical		2.7
Clerical		9.6
Sales		2.4
Service		1.0
Farming	24.0	
Other Primary	1.6	
Processing		1.3
Machinery		3.2
Construction		2.2
Transport		1.4
Other	2.6	

¹The percentages found under "Basic" are the percentage points greater than those in the same occupational grouping in the comparison area.

²Percentages found under "Non-Basic" are the percentage points less than those of the same occupational grouping in the comparison area.

Table 22

Percentage of the Study Area Labor Force in Basic and
Non-Basic Employment Compared with Alberta

Occupational Group	Employment	
	Basic	Non-Basic
Managerial		1.5
Teaching		.2
Medical	.6	
Technical		2.4
Clerical		4.8
Sales		1.0
Service	.1	
Farming	13.6	
Other Primary	.8	
Processing		.9
Machinery		1.7
Construction		1.4
Transport		3.3
Other	2.8	

Table 23

Percentage of the Study Area Labor Force in Basic and
Non-Basic Employment Compared with Canada

Occupational Group	Employment	
	Basic	Non-Basic
Managerial		1.9
Teaching		.2
Medical	.7	
Technical		2.5
Clerical		6.5
Sales		1.1
Services	.3	
Farming	20.4	
Other Primary	.4	
Processing		2.6
Machinery		5.7
Construction		.7
Transport		1.8
Other	2.6	

In the remainder of this section we shall use the basic/non-basic ratio of 2.1154 which was obtained through use of the assumption approach. There are two reasons for this. First, agriculture is the major source of employment in the area at this time. Future growth will likely take place in other primary occupations thus requiring a larger number of non-basic services. Second, because of the assumed industrial development of the area as a result of construction of a dam on the Red Deer River, the need for non-basic services would increase. In the short run, this increased need would be at least equivalent to the present relationship between basic and non-basic activities.

Population and Economic Base

The total 1971 population of the study area was 109,925. Total employment in the study area is 47,080. The population employment ratio is 2.3349. This indicates that there are 2.3349 persons for every one job in our study area. If we assume that the employment picture remains the same, we can project that for every new job created in the area, the population will increase by 2.3349. The dangers of such assumptions are that we know little about the degree of unemployment and underemployment in the area. When compared with the other units discussed under the location quotients section, we find that 43.6 percent of the study area is in the labor force compared with 49.5 percent for Edmonton, 43.3 percent for Alberta, and 40.0 percent for Canada. This indicates that the overall employment is similar to that of Alberta.

Growth Example I

In our assessment of projected growth we shall assume that our basic/non-basic ratios and population/employment ratios are fixed. We shall also assume that basic employment increases in the other primary and processing occupational groups (which include gas and oil field occupations).

If development in the study area was such that employment in the above categories increased to where it was equivalent to Edmonton's, the result would be an increase of 430 workers in the other primary category and 5,125 workers in the processing category. The total basic employment then would be 5,555 workers. The ratio of basic to non-basic employment was 2.1154. The total employment increase would then be 17,306. The ratio between population and employment was 2.3349. This would mean that population would grow by 40,408. The total population of the study area would then be 150,333.

Growth Example II

In this growth example, we shall assume that the development in the study area is such that those employed in other primary and processing activities will increase to an extent equivalent to the employment in those categories for 1971 in Alberta. There would be an increase of 8,900 in the other primary occupational group and 14,640 in processing for a total increase of 23,540 in the basic category. With the assumed fixed ratio of basic/non-basic employment at 2.1154, we find we have a total increase in employment of 49,797. With a population employment ratio of 2.3349, we find that the population would grow by 116,271. The total population in the study area would then be 226,196.

Conclusions

Our measures of the economic base of the study area were indirect. Many assumptions were made. We must be on guard against any simple application of basic/non-basic ratios. The utility of our study is that it gives some indication of the type of growth that might result in the study area.

ATTITUDES TOWARDS CONSTRUCTION OF A DAM ON THE RED DEER RIVER AND INDUSTRIAL DEVELOPMENT IN THE AREA

In this section of the report data generated by a questionnaire developed by the Red Deer Regional Planning Commission will be examined. The sociological consultants requested that some questions concerning construction of a dam and industrialization be placed upon the questionnaire. The questionnaires were coded, keypunched, and analyzed by the sociological consultants.

The area served by the Red Deer Regional Planning Commission is somewhat different than the Study area examined in other sections of the report. Figure 2 indicates the differences between the two areas. While the two areas are not identical, the sociological consultants did not have the resources to sample and administer a questionnaire to the study area. With these limitations in mind, it can be noted that much of the Planning Commission area would be affected by developments on the Red Deer River.

An analysis of the returned questionnaire indicated that a cross-section of the population was surveyed. The following table indicates the age distribution of respondents.

The sex distribution of respondents is indicated in Table 25.

A question concerning length of residence at present address was also asked. The response to this question is presented in Table 26.

Employment of the head of the household was another question that was asked. The information from that question is presented in Table 27.

Indications are that a cross-section of the population responded to the questionnaire. However, no attempt was made to determine whether or not it was representative of the people in the Planning Commission area. In our analysis we were more concerned with the attitudes toward development

Figure 2
Red Deer River Planning Commission Area and Study Area

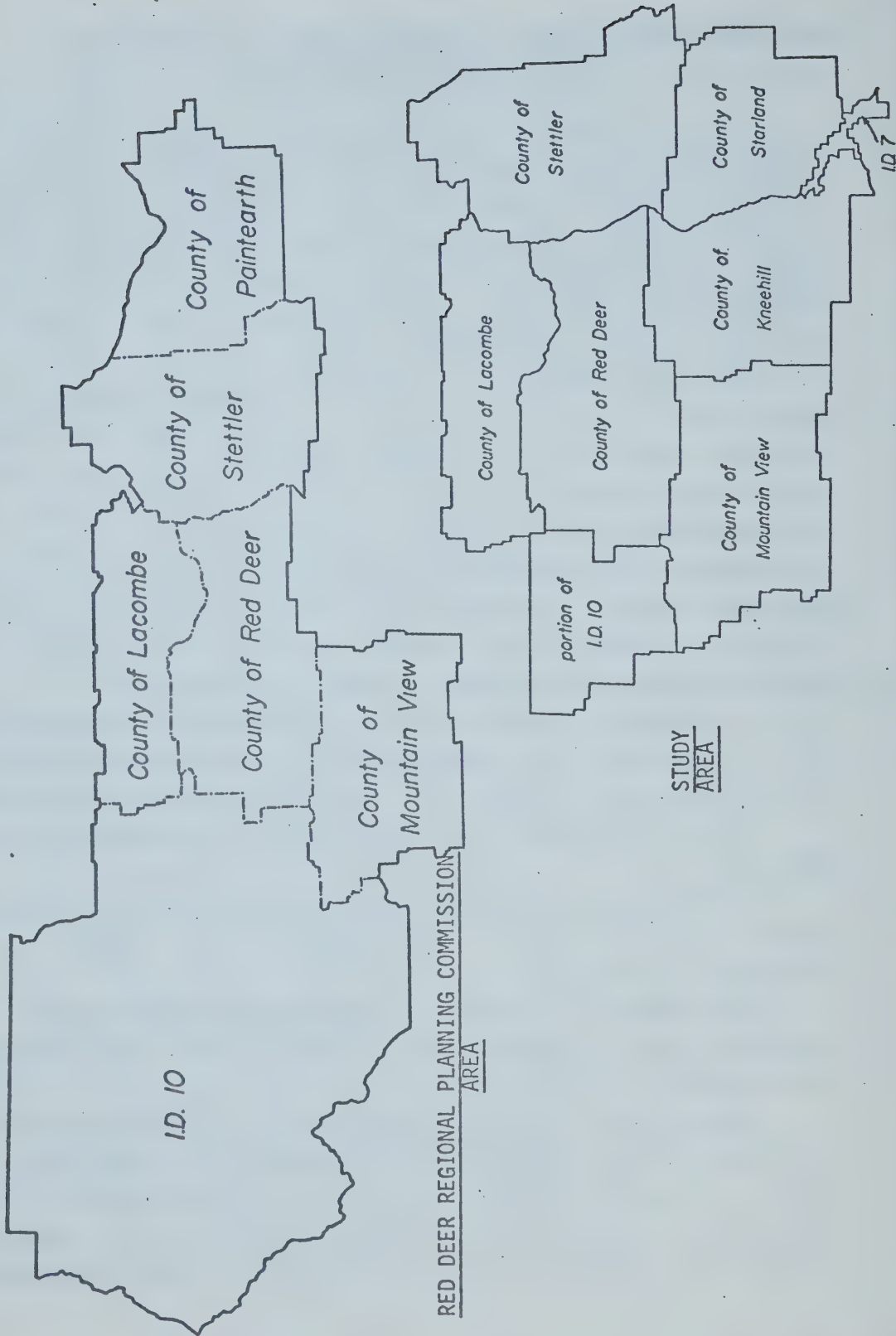


Table 24
Age of Respondents

Age in Years	Number	Percent
Under 20	63	1.9
20-34	1,094	33.0
35-54	1,255	37.9
55-64	486	14.7
65 and over	367	11.1
No Response	50	1.5
Total	3,315	100.1

Table 25
Sex of Respondents

Sex	Number	Percent
Male	1,820	54.9
Female	1,389	41.9
No Response	106	3.2
Total	3,315	100.0

Table 26

Length of Residence of Respondents at Current Address

Length of Residence	Number	Percent
Less than one year	326	9.8
One to five years	936	28.2
Six to ten years	499	15.1
Over ten years	1,507	45.5
No response	47	1.4
Total	3,315	100.0

Table 27
Employment of Head of Household

Employment	Number	Percent
Agriculture	691	20.8
Forestry	13	.4
Fishing and trapping	5	.0
Mines, quarries and oil	149	4.5
Manufacturer	37	1.1
Construction	77	2.3
Transportation, communication and other utilities	77	2.3
Trade	224	6.8
Finance, insurance and real estate	73	2.2
Community business, personal service, industries	830	25.0
Unemployed	173	5.2
Retired (dropped out)	354	10.7
Housewife	39	1.2
Student	10	.3
Professional	131	4.0
Self-employed	41	1.2
Government	19	.6
No response	358	10.8
Total	3,315	100.0

of a possible dam and the industrial complexes associated with it.

As noted in an earlier section of the report, construction of a dam on the Red Deer River would result in population growth and industrialization. Question 10 of the questionnaire attempted to ascertain the attitudes of the people towards population growth and industry. The responses to that question are presented in Table 28.

Of the respondents, 75.1 percent favored the development of a large shopping center. It should be noted that the only city in the Planning Commission area is Red Deer. Shopping facilities appear to be a "real" need for residents of the area.

Questions concerning industrialization of the area received many ambiguous responses. Some types of industrialization are received favorably. Of the respondents, 82.9 percent favored the development of small industrial plants; 43.7 percent favored the construction of large industrial plants employing 1,000 people. Only a very small percentage indicated that they favored industrialization to the point that the industry could be pollution prone. Only 16.8 percent of the respondents indicated preference for pollution prone industry.

As a follow up to this question, respondents were asked how they felt about certain advantages and disadvantages of industrial growth. Among the advantages listed were ". . . greatly increased number of job and employment opportunities; more money from taxes on new industry to help pay for better leisure, recreational, cultural and health facilities; more people living in the region." The disadvantages were ". . . many of the desirable characteristics of present communities would be changed or lost; the chances of damage to environment are increased; the great increase in population would make many communities too large." The feelings of the respondents are indicated in Table 29.

Table 28

Question 10. What would be your reaction to the following conditions if they affected the community (or nearest community) in which you live?

Statement	Very Favorable	Favorable	Unfavorable	Very Unfavorable	Opinion Not	
					Applicable	No Response
The population were to double	15.9	29.1	30.6	15.9	3.9	4.6
Steady population growth	24.5	52.9	11.9	3.7	2.4	4.6
The population were to remain stable	14.5	28.4	35.7	12.2	2.9	7.2
The population were to decline	2.0	4.0	33.9	51.1	2.6	6.3
A large shopping center	39.1	36.0	11.4	5.8	3.6	4.1
Small industrial plants	39.2	43.7	6.9	4.4	2.2	3.7
Large industry employing 1,000 people	22.2	24.0	24.8	18.9	5.2	5.0
Pollution prone industry	7.7	9.1	18.7	53.1	5.2	6.2

Table 29
Feelings Toward Industrial Development

Statement	Number	Percent
Generally speaking, I favor retaining the present character of our communities and economy	1,382	41.7
Generally speaking, I favor much increased industrial development	1,123	33.9
Neither of the two above statements best describes my feelings	660	19.7
No response	150	4.5
Total	3,315	100.0

Analysis indicates that the people responding to this question are concerned with development and their way of life. It is not contradictory to want better shopping facilities and better job opportunities and to be opposed to industrialization. Individuals have different goals and certain goals take priority over others. A "way of life" and fear of unknown factors leads to these apparent contradictions.

This was also indicated in the ratings given to various services and opportunities available in their communities. The following table indicates the nature of the above problem. Of the respondents, 73.4 percent stated that shopping and service facilities were good and very good. It is not known whether this was a bias of Red Deer respondents. It does indicate that when in a prior question 75.1 percent saw a need for a large shopping center that some concern exists when considering the extent of the development needed to provide those shopping centers. The factors of economic growth, population growth, and industrial growth associated with these developments are viewed as threats to their ways of life. Increased job

Table 30

Question 14. How would you rate the following things in the community (or nearest community) where you live?

Statement	Very Good	Good	Poor	Very Poor	Not Applicable	No Response
Shopping and service facilities	17.8	55.6	19.1	5.4	.1	2.0
Educational facilities	38.1	50.9	5.4	1.4	2.1	2.2
Health facilities	30.2	52.5	10.4	4.2	.8	1.9
Job opportunity for adults	7.3	42.2	30.3	13.1	3.0	3.9
Parks and playgrounds	24.4	51.3	15.9	4.2	1.7	2.4
Job opportunity for young people	5.7	30.5	35.3	19.5	4.6	4.4
Recreation facilities	20.9	53.8	17.4	4.1	.9	2.8
Government services	11.0	53.0	18.4	7.5	3.7	6.3
Road and transportation facilities	19.1	57.0	13.9	6.9	.5	2.5
Inter-community services	7.2	31.7	21.0	14.1	17.9	8.0

opportunities was indicated as a need for industrial development; 49.5 percent of the respondents indicated that good and very good job opportunities existed for adults. Only 36.2 percent indicated that good and very good job opportunities existed for young people.

With the exception of inter-community bus services, all other questions regarding community services indicated a general degree of satisfaction with what currently exists in the area. The range of good and very good replies was 64.0 percent for government service to 89.0 percent for educational facilities.

A question concerning the natural environment was asked. Any development in the area would draw upon the natural resources of the area and thereby affect the environment. In the following table, statements concerning the environment and attitudes of the respondents are analyzed.

Protection of the environment is a major concern of the respondents. It appears that the type of development favored by the respondents is the type where some industrial facilities would be built to provide job opportunities, but these facilities should not affect in a major way the current community structures or be harmful to the environment.

The attitudes of people in the area with regards to the construction of a dam on the Red Deer River was solicited. Again certain advantages and disadvantages were presented in the question. Among the advantages were ". . . increased flow during winter months; guaranteed water supply for Red Deer, and Drumheller, and by pipeline for Innisfail, Olds, Didsbury, Carstairs and Bowden; increased oxygen levels in the river, thereby improving fish capabilities; more water for economic and industrial expansion; erosion control and some flood abatement; improve recreation potential through the creation of a reservoir." Stated disadvantages were ". . . terminate the natural state of the river; which hinders natural or "wild river" experiences; the reservoir

Table 31

Question 19: The following statements represent the feelings of some people about the protection of our natural environment. Please indicate how you feel about these issues.

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	No Response & Error
The forested area in the foothills should be preserved for recreation, even if this means less development of mining industries	1428 (43.1)*	1084 (32.7)	399 (12.0)	245 (7.4)	33 (1.0)	126 (3.8)
Controls should be implemented to prevent pollution of our air and water, even if this means less industrial development	1735 (52.3)	1168 (35.3)	205 (6.2)	92 (2.8)	8 (0.2)	107 (3.2)
More should be done to protect the landscape from damage from coal, gravel and oil and gas operations	1631 (49.2)	1101 (33.2)	337 (10.2)	113 (3.4)	20 (0.6)	113 (3.4)
Arable farmland should be preserved for farming operation only	1657 (50.0)	1021 (30.8)	337 (10.2)	175 (5.3)	31 (0.9)	94 (2.8)

Table 31 (Continued)

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	No Response & Error
The lake shores and river valleys should be protected from over-development, even if this limits private development	1740 (52.5)	1108 (33.4)	233 (7.0)	124 (3.7)	22 (0.7)	88 (2.7)
More parks, campgrounds and public areas should be developed in our region	1187 (35.8)	1135 (35.2)	593 (17.9)	255 (7.7)	49 (1.5)	96 (2.9)
Action should be taken to assure the conservation of all wildlife	2172 (65.5)	877 (26.5)	144 (4.3)	39 (1.2)	11 (0.3)	72 (2.2)

*Bracketed numbers are percentages to nearest tenth.

Table 32

Question 22: How do you feel about this possible project?

Responses	Frequency	Percentage
Generally speaking, I favor the construction of a dam on the Red Deer River	1,832	55.3
Generally speaking, I am opposed to the construction of a dam on the Red Deer River	715	21.6
Neither of the above adequately express my feelings*	310	9.4
No response	458	13.8
Total	3,315	100.1

*See Question 22. Additional Responses.

Table 33
Question 22: Additional Responses

Additional Responses	Number of Responses	% of Responses
Wildlife preservation	13	.4
Farmland preservation	62	1.9
Siting	55	1.7
No industrial development	10	.3
More research	58	1.7
Further west	28	.8
Community disturbance	8	.2
Preservation of community structure	5	.2
Unspecified control	16	.5
Construction of dam provided industry controlled	7	.2
East or below the city	5	.2
More information to public	25	.8
All other	69	2.1
No response	2,954	89.1
Total	3,315	100.1

would flood some farm and wildlife land; would allow more industrial expansion in the region."

As indicated in the above table, the majority of respondents favor the construction of a dam on the Red Deer River. Many other concerns were expressed and those are presented in the following tables. As indicated in these tables, the additional concerns of the respondents ranged from the site of the dam to environmental issues.

The overall results indicate that the people in the area are very concerned about the development of the area. Their concerns are such that on many issues they responded in a contradictory fashion. It should be noted that people have different objectives (goals) and these objectives are ranked in terms of their importance to the individual. It would appear that industrialization of the area is a major concern of the people in the study area. Respondents want the benefits that industrialization might provide. They perceive these benefits in terms of increased employment opportunities and better overall facilities. However, they are also concerned with other factors associated with industrialization; the major concern regarding the preservation of their way of life. Their responses to the questionnaire were therefore contradictory at times.

POTENTIAL EFFECT OF INDUSTRIALIZATION ON THE AREA

In this section of the report the impact of industrial development will be analyzed. A case study approach will be utilized. This approach examines industrial development at other locations and attempts to make generalizations about possible development in the study area.

Rogers reports on the development of an atomic energy facility in Pike County, Ohio. Pike County was an agricultural area before the development of an atomic facility. The facility, constructed in the early 50's, cost slightly more than 1.2 billion dollars. To construct the plant, the land from many farmers was needed. The plant used in excess of 40 million U.S. gallons of water per day and employed 4,000 workers.

The village of Piketon became the fastest growing town in America. It grew from 768 to 3,000 in a few months. The school enrollment in the county doubled. Conflict arose between the new-comers and the old timers. A major concern of the citizens was the increased cost of living. Everyone expressed the feeling that plans should have been made to reduce some of the negative effects of the sudden change.

While some development projects might have problems similar to those that occurred in Pike County, careful planning would avoid many of these problems. In the book The Impact of Large Installations on Nearby Areas, it is suggested that careful planning enter into the decision-making process at all stages of the industrial development.

The pattern of events related to industrial development are:

- Demonstration of need for facility.

- Site search and selection.

- Rumor (leaks).

- Beginning of contact: new use and host area community action.

Acquisition -- direct or via condemnation, speculation in land values, private construction, and business activity.

Displacement of old uses and population.

Construction.

Operational phase:

Initial occupancy,

General rapid acceleration,

Full scale operation,

Fluctuations in operation,

Change in use.

Close-out phase.

This is a very comprehensive scheme and suggests all the necessary areas of concern from need of facility to the shut-down of the facility.

The need for industrial development was felt by the people in the study area. There is a need for job opportunities. One of the factors that must be considered is the eventual shut-down and closing of the industry. This has occurred several times in Canada. In the Province of Alberta, the "Coal Branch" is a classic example. In British Columbia, several communities based on the pulp and paper industry have had serious problems. In both of these cases it was not the depletion of a natural resource that caused the problem, but changes over which they had no control. Another example from the study area is the coal industry in the Drumheller region.

The development of industry in an area has many positive aspects. The major effect is to provide jobs. However, who is employed in these jobs? Is it the local "unskilled" inadequately-trained person, or the skilled, trained persons from outside the area?

Studies have indicated that many of the new jobs created will likely go to individuals migrating to the area. To the extent that the local potential labor force

does not have the human capital required and the employer does not have the time nor incentive to develop this resource, workers will be recruited from outside the area. In the case of the development of Grande Cache, workers were brought into the area. The result was that few of the "primary market" jobs went to the indigenous population. Primary market jobs are those having the following characteristics: high wages, favorable working conditions, stable employment, opportunity for advancement, and adherence to and administration of work rules.

Industry provides a broader tax base to the area. While industry provides for greater tax revenues, the services required in the area also increase due to industrialization. Among these are transportation, schools, hospitals and housing. Another taxation issue is whether or not the area providing the services is the body which receives taxes from the industry. If the development of industry was outside the jurisdiction of a community, it would be imperative that principles of tax sharing be instigated to provide for required services.

A fundamental question is why does industry locate at some places and not at others? Usually the reason is obvious in terms of location near raw resources, transportation systems, markets or some other factor or combination of factors.

In the study area there are many factors which might lead to its industrial development. As noted previously, the area has an abundance of natural resources, good transportation facilities and a potential labor force.

Many of the problems associated with industrial development could be avoided with careful planning. Presented here are a few suggestions to minimize such problems.

1. Control and guide growth of area. Develop existing communities. Housing plans.

2. Many facilities are only needed for a short period of time. The permanent labor force will quite likely be smaller than that needed for construction of the dam. Provide temporary housing, schools, and other public facilities. These temporary facilities should be phased out and not allowed to remain after the construction stage.

3. Develop procedures whereby the acquisition of land could avoid many of the problems associated with speculation.

4. Develop programs whereby indigenous people will have opportunities for employment in the industry. This should include employment at all levels within the firm.

5. Develop plans for the problems that will arise with the eventual shut-down of particular industries. This assumes that the industry is based on either a non-renewable resource or that factors outside the industry might bring about a closure of the plant.

Some examples of industrial development were found in the Financial Post. They are presented here.

In the article "Mammoth Development Falling into Place in B.C.", (Vol. 67, June 9, 1973, p. 12) an example of a plant that industry shut down is presented. The B. C. government's solution to the problem is also presented. The pulp and paper industry at Ocean Falls which was previously owned by Crown Zellerbach Canada Ltd. was purchased by the government of B. C.

Another pulp mill, Eurocan, was troubled with high costs and inadequate supply of chips for processing. Here the government proposed to develop the sawmill industry which would supply chips to Eurocan. The Province of British Columbia also tried to change the freight rate structure to improve the economic situation of pulp mills and sawmills.

In another article, "Industrial Boost for Cape Breton" (Financial Post, Vol. 60, Oct. 1, 1966, p. 30), the development of a plant to process bauxite from the Caribbean and

South America was being constructed. Cape Berton's economy was previously based on coal and steel but these were having trouble. Therefore the government was attempting to develop another industry.

In another article, "How Government Incentive Works With Industry in Slow-Growth Areas" (Financial Post, Vol. 63, June 28, 1969, p. 35), the incentive programs of the government are examined. These incentives are in the form of grants and low interest loans to designated areas. It is clear that industry locates in an area in which there is some advantage to do so. Usually the advantages are such things as location of natural resources, transportation facilities, labor and markets.

It was clearly shown that in the study area there are factors which would lead industry to locate there. One must question the development of any subsidized industry in an area where the industry does not develop without the subsidized incentives to do so. The difficulties encountered in the development of Grand Cache are examples of some of the problems to be avoided.

Community



SOCIOLOGICAL ASPECTS OF RURAL LIFE IN THE "IMMEDIATE AREA"

Introduction

Previous sections of this report have presented demographic and economic base data on the larger territorial unit called the "river basin" (those areas containing the counties of Red Deer, Lacombe, Stettler, Mountain View, and Municipal Districts of Kneehill and Starland). The focus of the study is now further limited for the purpose of analysis.

Sociological data are presented for the immediate area around the proposed development. The immediate area in this case is defined as all areas along the Red Deer River west of Highway #2 up to Sundre. The settlements and towns of Innisfail, Bowden, Olds, Sundre, and Caroline form the eastern, southern and western boundaries, respectively, of this area. On the north, the boundary is marked by farmland and homesteads, but it does not extend to any towns or settlements. The rationale for limiting the study to the immediate area is that the major impact of the proposed developments on the Red Deer River will most likely be in this area. It does not mean, however, that the impact is going to be limited to this territorial unit only. As is clear from the preceding section as well as from the sections that follow, if this proposed development goes through, the whole river basin and possibly additional areas (outside the river basin area) will be influenced in some sense or the other. It is argued, however, that the impact in the immediate area will be qualitatively different and more intense, and this fact as such warrants some attention. To gain an understanding of this impact, the focus of the study had to be directed toward the areas in the vicinity of the proposed developments.

The first step towards such an understanding is to delineate sociological groupings within the area based on spatial considerations. Groupings such as trade areas, communities and neighborhoods help us understand patterns of social interaction and the impact a resource development project such as the one under consideration might have on these patterns, groupings and related institutions. Groupings of people that can be identified with specific geographic areas are known as spatial or locality groups. Rural locality or spatial groups in the immediate area have a strong tendency to have trade or service centers as their focus. Therefore, some data on these centers are necessary.

Trade Areas and Service Centers

In order to gain an understanding of trading patterns for fulfilling needs, families and individuals were asked what centers and localities they use for this purpose. These data were supplemented with data from the Red Deer Regional Planning Commission Study. (It should be mentioned, however, that very few respondents in that study came from the area under consideration). These data were combined with observations obtained during travel through the area.

The immediate area surrounding the proposed dam sites are serviced by the town of Innisfail which provides various kinds of goods and services such as groceries, clothing and personal articles, home maintenance and equipment services, medical and health supplies and services, agricultural inputs and supplies, marketing and transportation facilities for agricultural produce, postal, school and church facilities, recreation and entertainment, etc. Most families along the Red Deer River and along Highway 54 use Innisfail to a considerable extent for convenience items and for intermediate level services. Highway 54 provides a natural route through Innisfail for traffic passing along the River to other places north, such as Edmonton and Red Deer. Red Deer

is used for major purchases, specialty items, and other social needs such as entertainment. The town of Innisfail may also serve as a stop-off place for travellers from outside the immediate area.

Of all the towns surrounding the immediate area, Innisfail seems to be the most differentiated sociologically. It also appears from the information at hand that its level of differentiation is fast increasing as a result of its location and its position as a service center for a fairly prosperous agricultural area. This is substantiated by an increased population (79 percent between 1951-1966).¹ New construction for both residential and commercial purposes seems to be increasing. The local leadership is pressing for more government agencies, services and offices to be located in the town. In particular, they have requested the construction of a provincial building by the government. Increases in demand for services caused by any new development in the immediate area will further differentiate this service center sociologically and will increase its capability to fulfill more needs, both material and social.

As mentioned earlier, the families in the immediate area use certain services in Red Deer, particularly for major purchases and specialty items and to satisfy their recreational needs. Other service centers such as Bowden and Olds are used by families from more southerly locations within the immediate area. The position of Olds is quite similar to Innisfail as a service center. It also provides a traffic outlet from the Calgary area and places south. Sundre provides the western part of the immediate area with certain

¹Dent, Noel, et al. Population Trends, Edmonton, Provincial Planning Branch, Department of Municipal Affairs, 1970.

types of services, but the town services suffer competition from the town of Olds. On the western periphery of the immediate area the village of Caroline provides a limited area with whatever services it can supply. In the center of the immediate area is the village of Spruce View which provides a few services, and the hamlet of Dixon, which has a grocery store and a church. Both serve a limited number of families. Other service localities are described later.

An important point to remember in looking at various centers serving the needs of the area is that most of the service places satisfy varying degrees of needs and depending upon the ability of a center to attract clientele, the service provided by one place may overlap with others. On the other hand, individuals and families pick and choose centers in terms of the importance of the need and the effort required to fulfill it. Convenience items, for example, are generally purchased with a minimum of effort and travel, whereas for specialty items and major purchases, individuals and families are generally willing to travel farther because larger centers offer a wide range of selection in price, quality, color and model.

Sociological Groupings Within The Area

The Red Deer River effectively dictates who associates with who by channeling traffic and by controlling access between the families on either bank. At present there are no bridges on the River between Innisfail and the proposed dam sites. The families on one side of the River cannot easily interact with the families on the other side. Therefore, under the circumstances, each side forms its own interacting groups and associations. It is true that a few families meet and socially interact with their relatives on the other side of the River, but it is with considerable

inconvenience involving long distance travel. This inhibits frequent contacts which would be possible if the River were not there.

Neighborhoods

For the purpose of this analysis, Bertrand's² definition of neighborhood is accepted and the neighborhoods defined for this study use his criteria. Bertrand defines neighborhoods as: "A group of people experiencing social interaction within a localized area with one or two social institutions as the focal point or means by which the area can be identified physically."

Tindstoll

Within the immediate area there are several neighborhood groups formed through long association and neighborly relations. On the north side of the River, for example, as one starts from Innisfail on Route 54, there is a grouping of families who identify themselves as the neighborhood of Tindstoll. This covers an area from about the Innisfail airport to about five or six miles east of Spruce View along Route 54. The southern boundary of this neighborhood extends up to the Red Deer River and the northern boundary of this neighborhood is differentiated from the neighborhood of Markerville. The residents identify themselves as neighbors and interact socially. Some families may reinforce these ties with kinship relations as well. The group shares no service facilities located within the area. They all depend upon Innisfail, Spruce View or Markerville for services, depending upon the nature of the need. Certain formal organizations (e.g., women's institute or farm organizations) identify

²Bertrand, Alvin L., Rural Sociology: An Analysis of Contemporary Rural Life, (New York: McGraw-Hill Book Company) 1958, pp. 77.

their existence with Tindstoll. On the whole, the neighborhood seems quite homogenous sociologically because of similar backgrounds, long association and through a similarity of interests.

In describing these neighborhood patterns, one must be aware that the boundaries of these neighborhoods are not clearly marked and there is a certain amount of overlap. However, the residents generally seem to be aware of the extent of boundaries and they constantly differentiate between "us" and "them".

Markerville

Markerville is located north of the neighborhood of Tindstoll. At present the central location consists of a cluster of homes with a few service buildings and facilities. This settlement is one of the older settlements in this area. It was started by Icelandic settlers who migrated from Pembina County in North Dakota in 1881. For a long period the locality served as a service center for a considerable number of farmers, who, according to the local residents, lived up to 15 miles away. Its location on the Medicine River and in the heart of good farmland helped the development of the present locality. In 1889, a creamery was established which enhanced its importance as a place to visit and fulfill needs.

However, as roads and other means of communication developed in the area, other service centers such as Innisfail began to attract families with better service facilities. Markerville began to lose its importance and declined as a service center. The major blow to this locality came in 1972 when the creamery finally closed.

The present site of Markerville serves as a retirement center for approximately 12 families and is surrounded by a few farmsteads. A local store, two gas stations, a church, a community hall, a skating/curling rink, a post office branch, and a beauty salon are located in Markerville to serve the

needs of the area residents. The present status of Markerville is between a sociological community and a neighborhood. It is fast approaching a neighborhood status.

The Neighborhood of Raven

West of Spruce View on Highway 54 is the stop-off³ locality of Raven. This locality has a gas station, a store, a repair workshop, a community hall and a church. There are four residential properties, including a house trailer. This cluster of buildings is located on the Raven River and acts strictly as a stop-off for local farm residents, hobby farmers, summer residents, visitors to the nearby Raven campground as well as for travelers to points west of Raven. For services which are not available at Raven, the residents of this neighborhood go to Spruce View where more and better services are available within a limited range. The outlying farm areas within the sphere of influence of Raven are inhabited by people of more heterogeneous characteristics and backgrounds because a number of hobby farmers and summer residents have recently purchased properties in the area. Initially, perhaps, the area was fairly homogeneous sociologically, but due to the pressure on land for recreation purposes people with diverse characteristics and interests have moved in either permanently or on a part time basis. In the local social structure, however, the older or comparatively older families with permanent interests in farming figure more prominently.

Kevisville

This neighborhood is a grouping of farm families around a church and a store. The area covered by this neighborhood

³See Zimmerman and Moneo The Prairie Community System, Agricultural Economics Research Council, Ottawa, 1971.

is mainly west of Raven and north of the Red Deer River and extends west as its boundary meets the neighborhood of James River Bridge. In this neighborhood there is a core of families who have settled here, have interacted socially for some time and who identify each other as neighbors. The main reason for the existence of this loose grouping is neighborly feeling and mutual identification. Except for those who attend the church, they do not share institutions. In the overall area there has been some influx of new residents who have bought land for recreation and other non-farming purposes. However, the basic unity of the core of older residents of the area is still there. This solidarity was further reinforced by the announcement of the dam site proposals. The residents, or at least some of them, faced a common danger and considerable sympathy and neighborly feeling was generated and reinforced as a result of participation in the Raven River Valley Preservation Association. The small neighborhood of Crammond is identified by local residents west of Kevisville. This neighborhood has a store.

James River Bridge Area

West of the Kevisville and the Raven neighborhoods is the area of James River Bridge which is again a loosely knit grouping of farm families interspersed with non-farm part time and summer residents. The neighborhood is based on a local store, community hall and service station where some of the residents satisfy certain buying needs. Because of the location of this neighborhood, there is no immediate bigger shopping facility in the vicinity.

The neighborhood, being upriver of the proposed dam site, is not of strategic importance from the point of view of sociological impact of the proposed developments. Most of the residents contacted were aware of the proposed developments but were not too concerned about them. The main concern of the residents along the River is erosion, but this concern does not seem to be shared by those families or residents who are

but it also draws families from the whole area in an overlapping fashion. It is the most important population settlement with a central location in the immediate area. If a dam is built either at Site Six or at Site Seven, this settlement will have the most impact of all the other settlements. Comments regarding this are presented in the next section of this report.

Sociological Groupings on the South Side of the Red Deer River

On the south side of the proposed dam sites, two natural groupings of families are important and of general concern. First is the neighborhood of Little Red Deer River, a fairly close-knit grouping of prosperous farm families. This settlement is centered around a community hall. Most of the families in the neighborhood are long-time settlers. They have had long associations with one another, have some kinship ties, and share common situations. Attitudes are reinforced by mutual social interaction, and beliefs are conservative and, in some ways, of a fundamentalist nature.

A few of the families in this neighborhood may be affected by Dam Site Six proposals, but the majority of the individuals in this neighborhood will not be affected except by way of increased traffic and pressure on land for recreation. The neighborhood experienced some social action related to the dam site proposals in late 1973 and early 1974 because of this concern as well as out of sympathy for those families who might be affected directly by the proposed developments.

The Women's Institute is quite active in the neighborhood but farm organizations are not very active. The reason given by one of the residents was that "we are a fairly well-to-do group of farmers and do not like union-type activities." Church and a few other social groups are active in the area.

away from the river banks except if they happen to know a family that would be directly affected. Summer residents and other non-farm users of resources in the area would perhaps not generate as much concern as long-time residents, even if adversely affected by erosion or other developments.

The Hamlet of Dixon

In the area north of the River the hamlet of Dixon is of importance. It is a cluster of households around a fairly large church, a store and a butcher shop, locker and freezer complex. The community acts as a center of communication for the farm families around the proposed dam sites. The local pastor, as a rule, has a certain amount of influence within his jurisdiction. The previous pastor was involved in the social action process initiated by the Raven River Valley Preservation Association. Most of the families on the farms around Dixon have been settled on this land for some time. They seem to know each other well and feel for each other and sympathize mutually. The bonds of common history and being in a similar situation are reinforced with kinship relations and visiting patterns and other social activities such as church gatherings, etc. The residents of the hamlet itself are more heterogeneous sociologically and do not reflect the same degree of homogeneity as residents of the farms.

Spruce View

The village of Spruce View acts as a center for areas immediately surrounding the proposed dam sites. It offers several services such as a large store, a hotel-restaurant, a high school, a gas station and repair facility, a coop store to sell agricultural inputs, a fire hall, and various informal service organizations. The village is a service center for its immediate area of influence. In addition, it offers services to those sociological groupings discussed earlier for whom the range of service is very limited. In this sense not only does Spruce View serve an immediate area

The neighborhood of Cottonwood is west of this area and is very similar in sociological makeup to the neighborhood of Little Red Deer. There is no central location for the neighborhood except for a local store and a community hall. The residents have a strong sense of identification with the neighborhood just as in Little Red Deer. Compared to Little Red Deer, a larger number of families from this neighborhood will possibly be affected with proposed Dam Site Seven proposals.

Communication and Transportation in the Immediate Area

The area closest to proposed Dam Site Six and Dam Site Seven is fairly well supplied with main and service roads as well as with field roads. Highway 54 passes through the area from Innisfail up to the locality of Raven and is parallel to and on the northern side of the River. It crosses Medicine and Raven Rivers and several small creeks on its way from Innisfail to Caroline. Most of the neighborhood localities on the northern side are connected with this main artery of communication. Individual farmsteads are connected to the main road with access roads. The river crossing is at Innisfail on the eastern side of the area. On the western side, the Garrington Bridge provides another crossing.

The situation on the south side with regards to roads is very similar to the situation on the north side. Most farms and neighborhoods are connected to each other and to the connecting highways and there is at present no difficulty in terms of communication and transportation. However, between the bridges at Innisfail and Garrington Bridge, there are no river crossings and as a result of this, there is difficulty in communicating across the river in this area. The roads in the overall study area are well-kept and during the summer, at least, there appeared to be no apparent difficulty in travelling. Innisfail has an airport located on Highway 54.

In terms of communications other than transport and roads, the area is well supplied with communication means and media. The local paper (Innisfail Province) is circulated throughout the area. According to one estimate, 75 percent of the households read The Province in the immediate area. The same source stated that subscriptions are on an upward trend. The Booster is supplied free to every householder and, as such, is a better means of communication than The Province, which is supplied on a subscription basis. The Calgary Herald, The Red Deer Advocate, and The Edmonton Journal reach the areas through individual subscriptions by mail as well as through newsstand purchases when individuals visit these cities. Therefore, their circulation is limited to selected families. The county newsletter is circulated free to individual families.

C.K.R.D. and C.K.G.Y. radio stations from Red Deer are popular throughout the area and it appeared during the field work that the people listen to the radio a great deal. C.K.G.Y. Television is the only television station normally received within the area; most farm and locality households have T.V. sets.

Personal visits serve as a useful means of communication and exchange. Also, considerable information is exchanged when people gather for community activities, social occasions and church happenings or when simply shopping for household necessities. In this sense, local stores act as good diffusers of information (for example, the Dixon store or the store in Spruce View). Throughout the area the telephone is used extensively to convey messages and "to spread the word around." The possibility of the use of this medium by outsiders is limited by the fact that cooperation of local residents is necessary in order to use this medium.

Churches

Most of the neighborhoods discussed earlier have churches of their own. These churches are active to varying degrees and their influence varies with the extent of their activity. Because of the decline in rural population in the area over the last few decades, considerable reorganization has been experienced by the churches in the area. The rural churches in this area face the same type of difficulties experienced by most rural churches in North America, i.e., decline in membership, inability to maintain a full-time preacher, financial problems and inability to be relevant in view of fast social changes.

The church at Dixon seems to have fared better than other churches in the immediate area. It has excellent physical facilities and a fairly good program along with a resident pastor. Other churches are available at Markerville, Kavisville and Raven. Besides these, there are churches in towns and villages on the periphery of the area. Involvement in community affairs on the whole seems low on the part of churches and the major concern to varying degrees seems to be religious activities, except at Dixon where the previous pastor did involve himself in some social action.

Schools and Educational Programs

The immediate area is in the Red Deer County School District. There are elementary and high schools in the town of Innisfail and the village of Bowden which are used by the students from this area. In addition, schools at Penhold, Pinehill colony, and Spruce View are used by families in the immediate area. The Mountain View School District has schools at Olds and Sundre and the Rocky Mountain House School District has a school at Caroline that serves the immediate area. Spruce View High School, however, is in the center of the area and the children from surrounding areas are bussed to Spruce View. However, because of difficulty in transportation

the Spruce View School only serves the northern side of the river. The children from the south side are bussed to Innisfail, Bowden and Olds, depending upon their home location. It appears that the school district boundaries correspond to the administrative boundaries and children located in one administrative unit attend school within that administrative area.

For schooling beyond high school, the children from this area go to Red Deer, Edmonton, Calgary or elsewhere, depending upon the interest and the type of education desired. It should, however, be mentioned that there is a college at Olds. Initially, it was a vocational agricultural college and it has historically served areas included in the immediate area by providing formal education and adult education courses in the field of agriculture. Similar use of the Olds College is continuing and the consultants met individuals from the immediate area during the field work phase of this study who had taken advantage of the educational facilities available there. Olds College continues to serve the area with interest-based instruction for adults and formal courses in agriculture.

In addition to the formal institutions of learning, various kinds of adult and continuing educational activity is observed in the area. For example, courses by the Departments of Agriculture and Education were mentioned by some families; Rural Education and Development Association home study programs were mentioned by others. Others indicated various kinds of church-sponsored or non-governmental organization programs of continuing education. University Extension, National Film Board and library facilities were some of the other learning activities mentioned.

Recreation

Red Deer River Flow Regulation Studies provide for a study of the recreation potential and needs around the dam site developments. Therefore, this report will not present any detailed data on this subject except to mention that the present recreation patterns are largely based on family, community, and other group-related activities. At the family level, recreation activity consists of T.V. watching, visiting and other family activities. Community-based activities may be related to institutionalized recreation sources and can involve such things as going to a movie, camping, school-related recreation activities, church-related activities or such other activities that might be organized by community groups (eg., a rodeo or a fair, etc.). "Recreation" as used above is defined in the broadest and most common sense use of the word and not in any technical or specialized use of the word. Recreational use of the immediate area is also made by families who do not normally reside within. This recreation use is mostly resource based.

Local Government and Related Services

Most of the area defined as the immediate area is within the administrative jurisdiction of the County of Red Deer. Parts of the area also fall into the County of Mountain View and the County of Rocky Mountain House. As such, administrative procedures with regard to taxation and provision of services for the area are as defined by the respective counties. In addition to county services, the area also benefits from provincial and federal programs for development with regard to agriculture, forestry, communications, water use, highways, health, social welfare, education, other public works, etc. There is at least one County Counselor from the immediate area to look after the interests of the residents. The towns and villages within the area further supplement the system of government and services through their own sources.

Social Organizations



SOCIAL ORGANIZATIONS IN THE "IMMEDIATE AREA"

Various kinds of neighborhood, community, county and provincial organizations are active and operational in the immediate area. Various county boards, a school board, and a recreation board have representatives from this area.

Alberta Fish and Wildlife Association is influential in the area through their representative. This organization also represents its interests on the Public Advisory Committee and the Technical Advisory Committee of the Red Deer River Flow Regulation Study Proposals. Their representative organization has been very active and influential in popularizing the policy and programs of the Alberta Fish and Wildlife Association in this area and as a result, has created considerable awareness about the problems in which his association has been interested. Also, he has done a study on Stauffer Creek and has been instrumental in the implementation of recommendations of that study to preserve the very excellent brown trout fishery and the local habitat of Stauffer Creek.

Cooperative organizations are quite active in the area under study, generally in the area of supplying farm and agricultural inputs and storage and marketing of agricultural produce. Cooperatively operated facilities of the above nature are available to the residents of this area both at Innisfail and at Spruce View. Cooperative stores supply farm necessities in both of these locations.

One farm organization is quite active in the immediate area. Generally speaking, the organization is more active in the east side of the area. As one proceeds from east to west within the area, the influence of this farm organization seems to fade out. Also it seems to be more active north of the River than in the areas south of the River in the immediate vicinity of the proposed dam sites. This is consistent with information available from across North America regarding the fact that in areas of stable farm income, farm organizations tend to be unattractive to farmers.

As indicated earlier, Women's Institutes are quite active in some parts of the immediate area. The neighborhood of Tindstoll has an active Women's Institute. This organization is not very active around Dam Sites Six and Seven. On the south side of the River, the neighborhood of Little Red Deer has an active Women's Institute. In late 1973, this Women's Institute initiated some social action in the area relating to the dam site proposals. This action created considerable awareness among the residents. The neighborhood of Cottonwood has an active Women's Institute as well.

In addition to these farm-oriented social organizations, there are many other social and benevolent organizations active in the towns and localities throughout the area. Various church groups as well are quite active in the immediate area. A look at the town surveys indicates, for example, that most of the towns have the normal quota of service organizations, societies, associations, social clubs, and civic organizations in comparison to most North American towns of comparable size.

From the information available it appears that participation in various organizations varies within families. It was found that in the rural areas within the immediate area, there were several families who held positions in various organizations on a family basis. For example, the husband may be active on the executive of the local farm organization and the wife may be involved in the executive of the local Women's Institute. This type of leadership situation makes it possible for an outside individual to communicate with more than one organization while visiting the same family.

Special Organizations and Events Related to the Dam Site Proposals

Little Red Deer Women's Institute

The information obtained on this institution indicates that it has been functioning quite actively for a number of years. They usually have quite active programs throughout the winter months. The nature of the program varies from year to year, and the ladies usually tend to undertake projects of some interest.

One feature of their program is that they make an active effort to involve men in their programs. The Institute is composed of middle-class farm women and its objectives are largely educational. During the year 1973-74, the Institute chose to look at the proposed dam site developments in the vicinity of their neighborhood. Very few, if any, of their members would have been directly affected by the proposed dams. The reason for their interest and involvement in the dam site developments was the general concern for participation in what was going on in and around their area. Another reason for their involvement was the sympathy that the executive and membership had for their neighbors who might be affected adversely by dam site proposals. They are generally concerned about the changes any resource development plans would bring to their neighborhood, particularly the pressures on land and increased traffic.

The Little Red Deer Women's Institute organized a meeting of local residents in the fall of 1973. As reported, the main purpose of the meeting was to obtain information about the dam site proposals and their effect on the townspeople and their neighborhood. According to some members of the executive, after considerable difficulty they were able to contact the officials of the Department of Environment and were able to arrange a date for the meeting at which these officials would act as sources of information. There was a misunderstanding between the Institute and the Department

regarding the date of the meeting, and the officials did not arrive on the day of the meeting, but a day later. This miscommunication created considerable disappointment, frustration and doubt among the local residents. The Institute had well publicized the meeting and many families along the Red Deer River had come to learn how the proposed development would affect their lifestyles and future. The residents present could not understand the reasons for the non-appearance of the officials of the Department of Environment, especially since the date had been arranged after consultation with them. It appears that the executive of the Women's Institute was also quite upset because they were the ones who were put on the spot.

Some residents felt that the government must have something to hide from the public and that was the reason they did not show up. Another interpretation was that the government officials were perhaps worried about the confrontation they might face from the local residents on this issue and hence they avoided the meeting. In retrospect, it was discovered at least by the executive that it was a human error involving a miscommunication as so often happens when communications are rendered difficult due to distance and lack of adequate communication channels. At the time of the consultants' visits during the summer of 1974, this aspect of miscommunication was still not known to some of the area residents and as such, they were saying that the government officials did not come to attend the meeting. In fact, the officials of the Department of Environment had actually come to the meeting fully prepared to inform the residents the day after the meeting was held.

One net result of the miscommunication was further confusion in the minds of the residents which deepened their suspicion about the intentions of the government. It also created grounds for rumor and misinformation and, as a result, various kinds of unwarranted motives were attributed to the government.

Another meeting was requested by the same Women's Institute primarily for obtaining more information from the government. However, the meeting was cancelled by the Women's Institute because the Institute members wanted their husbands to attend the meeting and at the time of the meeting in May, 1974, the men were too busy with their farm operations and could not be persuaded to attend. The Institute, however, remains quite actively interested in the developments, and at the time of the consultants' visit, the executive indicated a wish to have another meeting in November, 1974 or whenever definite data from studies becomes available. They also wished to be involved in the public hearings program.

Raven River Valley Preservation Association

Raven River Valley Preservation Association is an ad hoc organization of citizens and residents of the Raven River valley and their sympathizers. Unlike the Little Red Deer Women's Institute, this organization had as its sole purpose the initiation of social action in the area around proposed Dam Site Seven. As its name indicates, its main purpose was to oppose the building of a dam at Site Seven.

The Association seems to have grown out of concern caused by a statement made by the Minister of the Department of Environment about a definite possibility for a dam at Site Seven. Immediately after the announcement there was considerable concern in the valley because a large number of families would be affected to varying degrees by the proposed dam. Most individuals in the valley were, more or less, in the same situation. They were worried about their future and the dislocation that would be caused by a dam. Government was identified as the sole cause of their anticipated problems and action had to be taken to make the government aware of their situation. As a result of initial discussions, there was a feeling that something should be done to stop the

building of a dam. The concerned individuals called a meeting and an ad hoc organization called Raven River Valley Preservation Association was formed with the express purpose of opposing the dam.

Several emotionally-charged meetings were held immediately after the Environment Minister's announcement and feelings against the dam in the area were running high. Not only those families who would be affected by the proposed dam were involved; several individuals who sympathized with the local cause got actively associated. A list of all families who would be directly affected by Dam Site Seven was compiled by the Association. Next, a questionnaire was sent out to individuals asking some basic information on family size, income, value of entire business, total number of animals and their value, crops harvested, net worth, size of business, length of residence, number of school age children, etc. Of 60 questionnaires sent out by the Association, 40 were returned. The results were compiled to indicate the extent of individuals and families to be affected and the extent of loss or damage if the dam was built at proposed Dam Site Seven.

The Raven River Valley Preservation Association was recognized by the Department of the Environment as a legitimate body to represent local interests and was invited to represent these interests on the Public Advisory Committee of the Red Deer River Flow Regulation Studies. A representative was summarily appointed.

During the summer and fall of 1974, the consultants talked to several residents of Raven River Valley. The following impression emerged as a result of interviews and discussions.

1. The residents are a fairly heterogeneous group. The majority of them have a fairly localistic outlook with regard to Dam Site Seven development. However, there are a few individuals who relate this development to broader

societial objectives. The degree of feeling also varies with the extent to which an individual will be affected by the dam site developments.

2. Some residents have begun to accept the fact that they cannot stop progress and if the government has to build a dam in the interest of society, they cannot do anything about it.

3. A few families would perhaps actually like to sell out and move out of the area, retire or do something else.

4. The high emotional feelings by now have subsided to a considerable extent. This has been brought about by a sense of accomplishment. Many individuals feel that the Raven River Valley Preservation Association has effectively stopped the dam from being built at proposed Dam Site Seven.

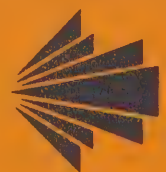
5. They have a member representing their interests on the Public Advisory Committee of the Red Deer River Flow Regulations Studies and they feel that the government is taking their wishes into account.

6. As the name implies, the Raven River Valley Preservation Association was initially composed of individuals who would have been affected by proposed Dam Site Seven. However, several individuals who would be affected if the dam was built at proposed Site Six were also involved. As a result, the Association had to broaden its objective, professing its opposition to any dam in the area. However, it is not clear how strongly the Association as a whole will feel if a dam is built at Site Six.

For some time now the Raven River Valley Preservation Association has been inactive because of some of the reasons mentioned above. This relative lack of activity may not be taken as a sign that the organization is defunct. The individual members of the Association still harbor considerable fear, suspicion and distrust of the government and even of the consulting firms and persons involved in the studies.

In case a decision is made to build a dam at proposed Site Seven, a considerable amount of opposition and conflict could be expected from the families involved.

Sociological Impact



POSSIBLE IMPACT OF THE DAM SITE PROPOSALS

The assessment of sociological impact of a resource development project offers some hazards and headaches. There is the problem of knowing exactly what the nature of the development proposal is. Questions such as the exact nature of the dam and particularly its importance in linking the southern side of the river to the northern side can be raised. What kind of building activity will it involve and for how long? What is the precise nature of the recreation related development? What kinds of facilities will it develop and what kinds of building patterns will it create, e.g., private construction, cottages, campgrounds, etc., and where will these facilities be located? One will also have to take into account competitive development of a similar nature in the areas around this development. In addition, there may be many other questions which cannot be raised at this time because of the unforeseen nature of events and developments, but which will ultimately determine the sociological impact on the area.

Even if all relevant data were available, predicting the sociological impact of a complex development such as that under discussion would utilize guesswork and speculation to a considerable extent. Moreover, experience of this nature from elsewhere with precise empirical data on these kinds of projects is not available. The data which are presented here should, therefore, be judged in light of the difficulties expressed above.

Impact on Sociological Groupings

If a dam is built at proposed Dam Site Six, the resultant development will certainly influence developments in the locations of Spruce View, Dixon and others such as Cottonwood and Little Red Deer. The existing facilities for services will have to be extended and developed in order to meet the demand of workers brought in by the building

activity at the dam site. These locations will experience the impact from the beginning of the construction phase. Since Spruce View already has certain services available, this availability will begin to attract their further use which will have a developmental and differentiating effect upon them. The locality will begin to differentiate with the beginning of construction activity and will continue to do so as the facilities are developed and used. With the linking of families and neighborhoods on the south side of the River, the locality of Spruce View will increase its sphere of influence as it is the only larger settlement with facilities in the immediate area. The school and its facilities will see increased use and the same will happen to other facilities and services. In fact, the locality will probably develop into a regional center of minor importance and size and its development will proceed along with the developments at the dam site. Similar effects on Spruce View can be expected if the dam is built on Site Seven.

The influence of the proposed dam on the hamlet of Dixon will really depend upon how the hamlet reacts to the developments. It is recognized that Spruce View is a strong competitor with Dixon for the location or development of any new or existing service related to the developments at the dam site. For reasons mentioned earlier, it appears that Spruce View might exert a greater pull than Dixon and there are chances that Dixon might be bypassed in favor of Spruce View, whose existing services and location on the main road is a major advantage at least in the earlier stages of building a base for that locality. The hamlet of Dixon will also participate to a limited extent in the development process, particularly if it is on or close to the north-south road linking Spruce View or Highway 54 to the dam site. One could expect some development in the area of convenience facilities

such as the existing grocery facilities. Being close to the River, it will experience more traffic and the population might become more heterogeneous.

To the southeast the neighborhood of Markerville and Tindstoll will not be seriously affected by the proposed developments except in terms of increased traffic and increased pressure on land for non-agricultural use. This will happen if the reservoir created by the dam results in considerable recreational facilities. As a result of demand on land for non-agricultural purposes, it is possible that these neighborhoods will experience an increase in summer residences and hobby farms. To some extent this is already happening in the area and a noticeable trend was found through discussion with farm families in the area. This influx of people, some of them only summer residents, may have some influence on the development of facilities for convenience items such as groceries and gas in the Markerville area. Since Tindstoll does not offer any of the services at present, it is possible that residents of this area will continue to use services either at Spruce View or at Innisfail, depending upon their locations and the location of a particular service.

The neighborhood of Raven and its development in future will depend upon where the dam is built, if at all. If the dam is built at the present proposed Dam Site Six, the present Raven locality will continue to service the local farmers, summer residents and tourists traveling through the area. In this case it is expected that because of the development of recreation facilities around proposed Dam Site Six, the overall recreation potential of the area will increase, creating more demand for land for non-agricultural use and hobby farming. This will have the effect of increasing the population to be serviced by Raven at least during the summers. Increased use of the

campground at Raven will occur along with an increased use of services. Under the circumstances, it is conceivable that the present site will attract more services or residents or will differentiate and develop the existing ones. It is anticipated, therefore, that if the dam is built at Dam Site Six, it will have a moderate developmental effect on the present facilities and services at the Raven site.

However, if the dam is built at Dam Site Seven, the present locality of Raven will be flooded. One store, one gas station (small) and a workshop, along with four residential properties, will be completely submerged in water. The Raven store might be re-established in the area provided a "suitable" locality can be found. However, the chances for relocation of the repair workshop are not very apparent. The kind of people moving into the area and the kinds of attitudes they develop towards their already settled neighbors will determine their use of the local church and their participation in other community activities.

In case the dam is built on Site Seven, this neighborhood will be split in two by the reservoir created on the Raven River. The present patterns of traffic and social interaction will be seriously disrupted. The only exits out of the whole area west of the Raven River will be by taking route 54 to some point west of the present locality of Raven or taking Garrington Bridge over the Red Deer River and traveling to Bowden and Innisfail. Not only will the present patterns of social interaction between the families across the Raven River be disrupted, but interaction of the whole area with the locality of Spruce View will be hindered because of longer travel required to reach that area. Since there is no other town like Spruce View west of the area, area residents may still have to depend upon Spruce View or Bowden. Such a change in the traffic pattern will perhaps necessitate

the development of some service facilities around the present site of Raven as discussed earlier. This relative isolation and difficulty in communication may have a retarding influence on the development of this neighborhood until such time as proper communications on the western side are developed.

The impact of the proposed development on the present areas of James River Bridge and Crammond cannot be clearly assessed. The area is quite far from the proposed dam sites and the patterns of transportation further west of this area are not well developed. If the Cochrane-Sundre road were paved, one could expect some traffic from the City of Calgary to reach this area in order to use the reservoir and recreation facilities so created. In that case, the neighborhoods will experience the same kinds of development and changes as described for other neighborhoods and areas. One would see a general accentuation of the trend towards heterogeneity in terms of social characteristics of people and perhaps better developed institutions and services at a more differentiated level. This will be accompanied by increased traffic and increased pressure on land for non-agricultural purposes.

If improved transportation and communication systems do not appear west of this area, and especially if the Cochrane-Sundre road does not materialize, the area being isolated will not experience the same kind of growth and development. In that case, the major developments will, for the time being, channel through the existing roads.

Sociological Impact on the Areas South of the River

Two identifiable neighborhoods south of the River in the immediate area are Little Red Deer and Cottonwood. First of all, a dam at either Site Six or Site Seven, along with its access roads to the dam area and across the River, will provide opportunities for the families to

interact and for the families on the south side to use some of the services in Spruce View if that locality develops into a better service center. For these residents this development might mean a change in direction for the use of services and a new loyalty to Spruce View instead of to Innisfail. Children will begin to use Spruce View school and the church at Dixon will experience increased use. A dam at either location will mean reinforced social ties and relations between the families on both sides of the River.

Neighborhood solidarity, very strong at present, will be somewhat reduced because of the increased anticipated heterogeneity of the population if pressure on land increases and land is bought for non-agricultural purposes. The residents of Little Red Deer are already concerned about non-farmers buying land in and around the area as was indicated to the consultants during the field work phase of the study. Traffic on the roads, particularly for use of the proposed reservoir, will increase the opening up process of these neighborhoods to outside interaction at a greater rate than is possible now. This seems to be the main cause of worry for the people of Little Red Deer at present. It is also one of the reasons that a large number of individuals who may not be directly affected by the proposed development are generally opposed to the building of a dam. Development at proposed Site Six will affect the neighborhood of Little Red Deer more than development at proposed Site Seven. If the dam is built at Site Seven, it will have considerable influence on the Cottonwood neighborhood.

On the positive side, the land prices will go up and the newcomers, summer country residents and tourists using the recreation facilities will bring more money into the area causing some development of services in the area, e.g., a bigger grocery store, a repair shop, etc.

The impact on the community of Innisfail will be of such a nature that the development of the dam, reservoir and associated facilities will increase its differentiation level by creating demands for services and facilities at a greater rate than would be possible without the development. This will happen in spite of and due to the fact that Spruce View might develop to provide increased services. Innisfail and other towns south along the proposed water pipeline will also benefit from that development. Communities such as Bowden and Olds will experience development because of the dam site developments, largely in the same fashion as described for Innisfail, though Innisfail may benefit from this development more than Bowden or Olds.

The town of Sundre is experiencing considerable development already (population increased between 1951 and 1966 by 147 percent).⁴ A new subdivision of residential lots has recently been offered for sale. It is hoped that the town will benefit more from the present dam site development, particularly if the Cochrane-Sundre road is completed and if the town is linked with the proposed reservoir by a good road.

Just west of the immediate area of the proposed dam sites is the village of Caroline in Improvement District Number 10. What will be the impact of dam site proposals on this village? Caroline gained .7 percent population between the years 1956 and 1966. Its population actually went down between 1961 and 1966 from 321 to 294.⁵ From the information available it appears that the building of the dam and the related developments will minimize the isolation

⁴Dent, Noel, Population Trends, Edmonton, Provincial Planning Branch, Department of Municipal Affairs, 1970, p. 7.

⁵Dent, Noel, op. cit., p. 8.

of Caroline and the village might benefit from an overflow of recreation and tourist traffic coming to the proposed dam sites.

A question can be raised about the impact of the proposed developments on the City of Red Deer. If the assumptions underlying the previous discussion are realistic, it can be deduced that Red Deer will benefit initially from the construction activity on the proposed dam site as it is the only big population center nearby. As the reservoir is completed and the recreational developments proceed, Red Deer, like some of the other centers, will participate by providing technical, financial, managerial and other relevant services to the residents and users of the development on a continuing basis.

In addition to the benefits or impacts that the City of Red Deer might experience because of the dam site development, the city will perhaps benefit more directly from projects made feasible by flow regulation of the Red Deer River. The impact of one such development on Red Deer and the area has been examined on a hypothetical basis in one of the earlier sections of this report. Similarly, towns such as Innisfail, Bowden, Olds and others might benefit from enhanced water supplies and related developments.

Over all, one sees various settlements, villages, towns and the City of Red Deer benefiting from the dam site developments. Each community will provide services to the extent of which it is capable. For those services not provided by the smaller communities, consumers will travel to the next level (i.e., larger) communities.

Impact on Selected Institutions and Organizations

It has already been stated that as a result of the proposed development, the locality of Spruce View might emerge as a service center for the surrounding area.

As such, the institutions, services and organizations based in the town might have to be expanded and upgraded to accomodate increased use.

In view of the fact that Spruce View will assume a more important position as a central place, it will need additional facilities and services provided by various government and non-government organizations. A need arises for comprehensive planning in the whole area with Spruce View as the center. The government and the Red Deer Regional Planning Commission should have a fresh look at the whole "new area" in case the proposed developments are approved so that comprehensive planning for this area as a unit can be undertaken.

One immediate area of concern is the change in communication and transportation patterns. New roads will have to be built to link areas north and south across the River. An access road to the dam site from the south will be required and some access west to Sundre and south to Calgary might be found necessary. If the dam is built at Site Seven, families in the Kevisville area will be cut off because of the flooding of the Raven River. As well, Highway 54 will have to be redesigned in the area west of Spruce View where it crosses the Raven River.

In redesigning highways and major arteries, certain sociological factors must be kept in mind, e.g., the natural flow of human population, community and neighborhood boundaries and patterns, location of services, etc.

In the area of education it is expected that Spruce View school will experience expansion because of expected use by students from areas south of the River if a roadway connecting north and south is built. Another implication worth mentioning is that if Site Seven is selected, children from the Kevisville area coming to Spruce View school will have to be bussed over a longer route.

CITIZEN CONCERN ABOUT THE DAM AND RELATED DEVELOPMENTS

For the guidance of decision makers and planners concerned with the dam site proposals, it might be of benefit to record citizen reaction to the dam site proposals. In interpreting the information presented below, one must be careful because the public thinking or opinions represented in this section were based on information available at the time of recording this data (summer, 1974). The consultants were of the opinion that very little actual information was available with regard to the definite nature of the project in view of the fact that the studies on the various subjects were still being conducted. Therefore, some of the data presented below suffer from this limitation.

Concern in Areas Below the Proposed Dam Sites

Several families were interviewed between Spruce View and Innisfail with regard to benefits and nonbenefits of the project. The general consensus of the majority of families was that the building of the dam would benefit families along the river downstream from the proposed dam sites. The benefits were:

1. Some land in the river valley occasionally gets flooded at present. With the building of a dam it would not flood any more and its continuous use by the farm families would become possible.

2. During periods of high flows, the River backs up into the streams and creeks and into the Medicine River, flooding some uplands. With controlled river flow this will stop. This is viewed as both good and bad because although the river will stop flooding, the landowners do not know what effect it will have on the water table of the lands now being flooded.

On the whole, those families farther away from the River are not very concerned at present except by way of sympathy with families around the proposed dam sites.

The same is true of communities. One of the consultants attended a meeting of the Penhold Village Council to discuss the matter with the Council. The Council felt they were not close enough to the River to be directly affected, and as such they are interested in what happens but are not as directly involved as the families around the dam sites. However, those who knew families or individuals who would be affected felt sympathetic and they wanted to be consulted in the final decision.

Concern Around the Proposed Dam Sites

The individuals and families around the dam sites are the ones who react most strongly because their lives, properties and efforts are directly involved and they are the ones who will be most affected. Their thinking and opinions can be found in another section of this report. Generally speaking, however, feeling about proposed developments runs from very active opposition to passive acceptance of whatever will happen. Two general questions are being raised:

1. "Why me" or "why us?" A large number of families who might be affected by the proposed developments question the fact that society is asking them to make sacrifices for the benefit of others.

2. The second question asked is why not build a dam above Sundre or why not build a series of small dams which will not involve any dislocation of the families and individuals.

Others already see the dam as inevitable and see that the government has strong public support for its decentralization and dispersion of industries policy for which regulation of the Red Deer River flow is necessary. The proposed water pipeline from Innisfail to towns south has reinforced

this thinking. These individuals, although in minority, accept the necessity for a dam and in their discussions with the consultants, would make suggestions for precautions to be taken in building a dam and reservoir. In doing so some of them perhaps reflect the views of the organizations they represent. Among suggestions were the preservation of a fishery (and implications of fluctuating flow on the development of a good fishery) and aesthetic considerations such as empty shorelines, protrusion of tree trunks from the water, etc.

Concern Above the Dam Sites

The residents above the proposed dam sites on the Red Deer River do not seem to be overly concerned about the dam. Several families contacted in the area of Crammond and James River Bridge had heard of the proposal for a dam but they indicated that they were not really concerned about the proposed dam one way or the other. As indicated earlier, only a few of the families along the River were found to be concerned about erosion problems and this concern was limited to families whose properties are on the river banks.

The concern of the citizens of Sundre is more of a local nature and is based on the interests of their own town and its residents. Most of them will perhaps support a dam upstream and all kinds of supportive arguments are forwarded in favor of such a proposal. So much so that the Public Advisory Committee member from Sundre indicated in his questionnaire that if a dam is going to be built downstream from Sundre, there is no need for him to be on the Public Advisory Committee.

Towns such as Innisfail, Bowden and Olds would favor a dam on the river, particularly if it will bring some development and business to these towns. Most of these towns seem to view this development in the above perspective;

however, some officials in the town organizations may have interests not best served by the dam and accompanied developments.

Public Participation



PUBLIC PARTICIPATION IN THE RED DEER FLOW REGULATION STUDIES

Frame of Reference

Citizen participation or public participation is a general term used to denote a variety of situations in which the public concerned participates in some process that will influence their life. It means different things in different situations. Participation is like motherhood, nobody seems to be against public participation. After all, participation of the governed in their government is, in reality, the cornerstone of a democracy. The more people that participate in a social process, the better it is, particularly when one talks about processes such as decision making. However, public participation is thought of in varying ways and is aimed at different things, and generally one envisions many images of participation and participative activities. However, some of them, if inspected closely, will not qualify as participation at all. Generally speaking, there is considerable confusion around the word participation and even when the word is properly defined, different definitions suitable to a definer's objectives are given. In reality, participation "is the strategy by which the citizens join in determining how the information is shared, goals and policies are set, resources are allocated and patronages are parcelled out."⁶ There are different degrees of participation. Arnstein defines participation in three degrees, i.e., (a) non-participation, (b) token participation and (c) participation. Within each degree there are steps of participation. For example, non-participation is of two kinds--(a) manipulation and (b) therapy. Token

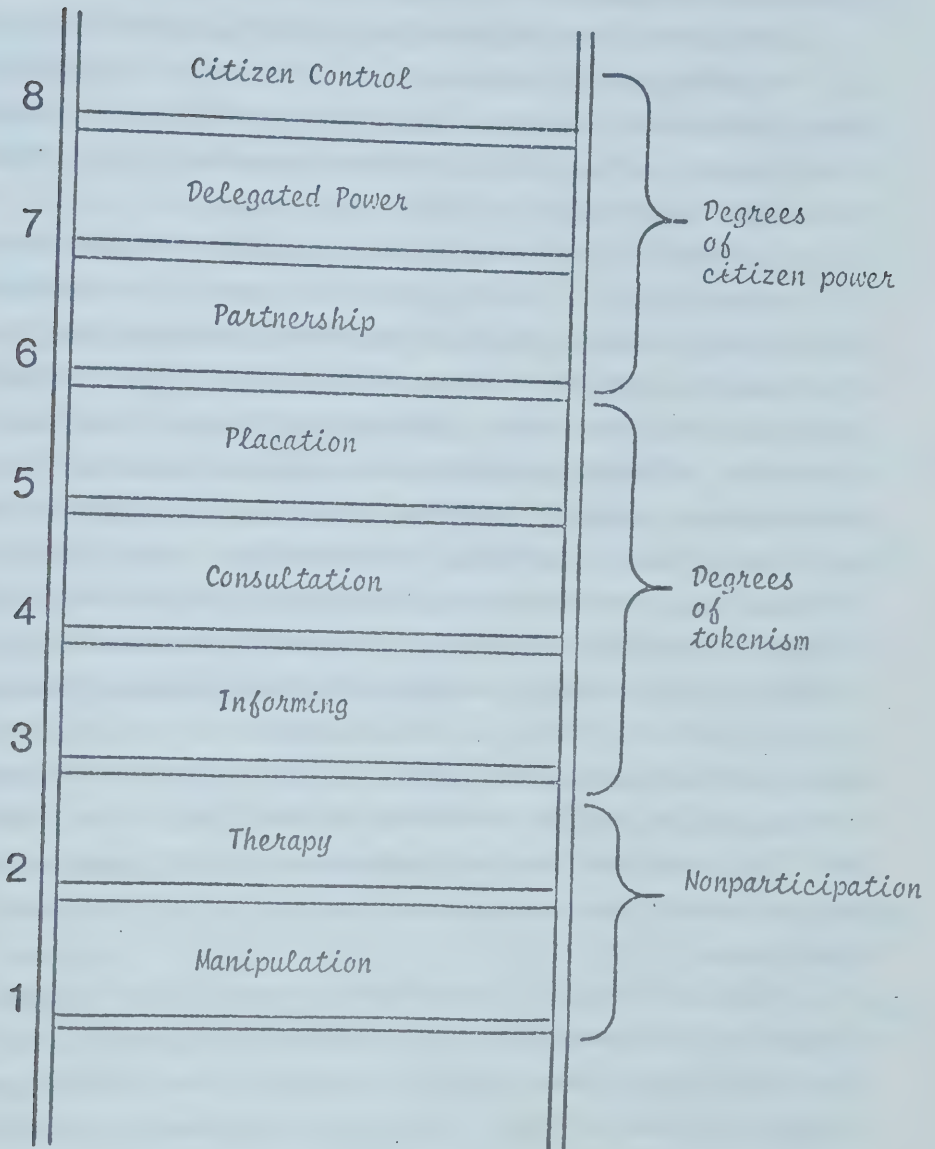
⁶Arnstein, Sherry R., "A Ladder of Citizen Participation," American Institute of Planners Journal, July 1969, p. 216.

participation has three steps, i.e., informing, consultation, and placation. Participation has three steps--partnership to delegated power to citizen control, the highest level of citizen participation. The author places these steps on a ladder of citizen participation with a low of manipulation to a high of citizen control used to classify participation activities in any given situation. The classifactory scheme is useful because it provides for a variety of situations. Though the author's scheme was evolved out of the experience of poverty programs in the United States, there is no doubt that it is applicable to a variety of situations including one like the Red Deer River Flow Regulagion Proposals. Figure 3 illustrates the various rungs on a ladder of public participation.

Public Advisory Committee (PAC)

To ensure a public input into the Red Deer River Flow Regulations Proposals, a Public Advisory Committee was organized by the Minister of the Environment. A list of the Public Advisory Committee members is attached as Appendix E to this report. The members of the Public Advisory Committee in this case represent two major sections of the public, i.e., the local government organizations within the general area, and special interest groups such as those involved or associated with water and resource use, people from planning organizations and one farm organization. One member from the Raven River Valley Preservation Association was appointed after the Association came into existence. As far as could be ascertained, various organizations and special interest groups were asked to nominate representatives for the Public Advisory Committee. Most of the nominated members appointed by the Minister indicated that they were pleased to be nominated and appointed to this Committee and felt that they could be of some use and help to their organizations as well as to the Department of the Environment.

Figure 3
Ladder of Citizen Participation



Eight Rungs on a Ladder of Citizen Participation.
From Sherry Arnstein, "A Ladder of Citizen Participation,"
American Institute of Planners Journal, July 1969.

Most of the members of the Public Advisory Committee live within the river basin area. However, at least two of the members lived outside the river basin and a considerable distance from the dam sites.

The Committee had two basic anticipated functions: (1) to bring public concerns to the Committee meetings so that they could be taken into account for the proposed studies, and (2) to take information from the Public Advisory Committee for diffusion into the public.

The Public Advisory Committee held its meetings during the study period primarily for the sake of consultation about the project as well as for receiving information on the progress of studies. The composition of the Public Advisory Committee was such that differences in perspectives created cleavages between the different groups involved, and the Committee as a whole did not function as effectively as would have been possible. The meetings were mostly of an informational nature along with some consultation and feedback from the members. A careful selection of representatives from a broader variety of groups could have provided a better public input to the studies and could possibly have provided a higher level of participation on the Arnstein participation ladder referred to earlier. The Committee held its last meeting on September 18, 1974 and postponed further meetings until data from different studies became available.

With a view to strengthening the future public participation programs in resource development projects, the consultants were asked to look at the public participation process in the Red Deer River Flow Regulation Studies. To obtain these data a questionnaire was designed and administered to the Public Advisory Committee members and a meeting of the Committee was attended by one of the consultants to observe the process.

Of the total of 24 individuals on the Public Advisory Committee, 17 returned the questionnaire. An analysis of data from the questionnaires indicates that the majority (17 out of 24) of the Committee members seemed to understand their role of bringing public concerns to the Committee and taking back information to the organizations they represented. At the time the questionnaire was administered there were two or three members who were new and had replaced earlier members. They did not know what was expected of them as members of the Public Advisory Committee and have had no opportunity to report back. Since the members of PAC represented organizations, they took back the information and reported it to their organizations only. It is not clear whether this information filtered through to the public from these organizations.

The members were asked if in their opinion their role had been fulfilled. The opinions were divided. About two-thirds of them indicated that in their opinion their role had not been fulfilled or partially fulfilled. The rest of them indicated satisfaction with the fulfillment of their role.

With regard to the satisfaction of the members with the activities of PAC, only 2 of the 17 individuals who returned our questionnaire felt satisfied. Five were partially satisfied, while the rest indicated no satisfaction. The main reasons for this comparative lack of satisfaction, as indicated by the respondents, were a lack of understanding of the role and function of the Public Advisory Committee, its status, and their individual roles and perspectives as members. It is clear from this data that for an effective working of a public participation program, the representatives of the public must be educated about their roles and functions.

We found considerable interest among the members with regard to their future participation in similar committees.

For example, when asked whether they would like to serve on another advisory committee, 14 out of 17 indicated their responses in the affirmative.

The consultants solicited the opinions of the PAC members concerning the composition of the Committee. Three of the members mentioned that the Association of Travel Agents, Alberta White Water Association, and Alberta Wildlife Federation should have been invited to have representation on the Public Advisory Committee. A member objected to the Canoe Association membership on the PAC on the premise that such groups are not important from the point of view of a project such as the Red Deer River Flow Regulation Proposals. The representative from Sundre was of the opinion that since the proposed dam sites were downstream from Sundre, there was no need for him to be on the Committee.

It is of significance that only one member of the PAC is from the immediate area. While it is essential to involve representatives of local government units as well as representatives of special interest groups and associations, it is also necessary to initially give consideration to adequate representation of the people who would be directly affected by this development.

Awareness and Information Since March, 1974

Since the contracting of various studies on the Red Deer River Flow Regulation Proposals, considerable awareness has been brought about by the consultants through their routine work with the population in the immediate area. The Public Participation Staff of the Department of the Environment and the Project Management Staff of the Red Deer Flow Regulation Proposal, through personal visits and group discussions, has created considerable understanding of the nature of the proposed developments. Through constant

discussion among themselves, people in the immediate area have sensitized each other about the need for the proposed dam and its implications. However, they have also become aware of the implications of these changes on their lifestyle. The relationships between their own lives, their families, communities and the world at large has come into a clearer focus for them. The families and individuals have been forced into thinking about the pros and cons of societal benefits in relation to their own. Many of the people have gone through a painful decision making process and have come to their own conclusions with regard to their relationships with the society. Others are still trying to cope with unavailable facts and the justifications for their inflexible positions. We believe that to facilitate this ongoing process, considerable more and open communications between the families and the government is necessary. Hopefully, this will become possible now with the availability of research data now being compiled.

We found during our discussions that even those families who are going to be directly affected are trying to find justification for their situation. Most of them understand the forces of change and many of them understand that somebody has to make a sacrifice so that society can benefit. Many of these individuals and families talked to us frankly and openly. They not only favor change, but many of them want to facilitate it provided they themselves do not end up as losers and excessively hurt.

We believe one measure that will encourage constructive attitudes and will help people subscribe to a decision which favors the larger society at some disadvantage to themselves is the open flow of communication between the people and the government. By people we mean three groups: (1) families to be directly involved, displaced or affected, (2) neighborhoods, communities and the groups within the immediate area, and (3) the public at large. We suggest

that any information to be communicated to these three categories of public be communicated in such a time sequence that the families to be directly affected receive clear and relevant information first-hand from the Department of the Environment before any other group receives it. This will eliminate the problem of directly involved families getting second hand and distorted information from secondary and tertiary sources. Once the information is communicated to these families, then the neighborhoods, communities and groups could receive the information, followed by information dissemination to the general public. In terms of time, all three categories could be reached within a day, observing the time sequence, provided the information dissemination is properly planned and not done on an ad hoc basis. The rationale behind this suggestion is that if those whose lives are going to be affected by a resource development project receive information about it before anybody else, they will feel that the government is being very considerate about their situation. Therefore, the possibility of their supporting such an activity is increased. The second reason is that delayed and distorted communication, as has often happened in the past, does not contribute to constructive understanding of the situation. It merely creates suspicion, fear and distrust.

Communication Strategies Following the Completion of Studies

During the field work phase of this study, the consultants found that in spite of the efforts related earlier, there is considerable misinformation, rumor, doubt and suspicion in the minds of the immediate area residents about the government's intentions and knowledge with regard to this development. It is absolutely essential that these misunderstandings be clarified for the present and that they are kept to a minimum in the future. To

accomplish this we suggest a direct and first-hand communication between the government and the local residents. The following suggestions might help effective communication once the results of the studies are available.

Distribution of Study Reports

We suggest that copies of summary reports and complete reports (reference copies only) be made available to three categories of the public in such a way that the families to be directly affected receive them before the communities and groups in the immediate area. Communities and groups should receive them before they become available to the general public.

Holding of Public Meetings

The government should plan on holding at least two meetings within the immediate area. The locations which seem most suitable at the present time are Spruce View and Little Red Deer. Additional meetings should perhaps be held at Innisfail, Red Deer and Sundre if considered necessary.

The meeting at Spruce View should be organized through the Raven River Valley Preservation Association and should involve individuals from proposed Dam Site Six in the organization process. The meeting at Little Red Deer could be co-organized through the Women's Institutes of Little Red Deer River and Cottonwood. The families from Dam Sites Six and Seven should be specifically invited to participate in the organization of these meetings. Three further actions are recommended.

1. The families to be affected at both dam sites should be invited to both of these meetings by a special invitation letter. Also, local organizations, legitimizers and other representatives should be encouraged to attend the meetings.

2. Individuals should be encouraged to attend the meetings on both sides of the River.

3. The meetings should be publicized well in advance to the rest of the public through radio (C.K.R.D. and C.K.G.Y.). Also, use of the County of Red Deer newsletter, the Red Deer Advocate and papers at Innisfail (The Province and Booster) may be made.

Before these meetings, the government should assist local groups in the study and analysis of the reports and particularly with the implications of data presented in them.

It is assumed that the public meetings mentioned above will provide information on public concern on this issue to the government. The government can then make an appropriate decision based on data obtained from the studies as well as on the public thinking and concern. If this assumption is true, then a decision about the desirability of a dam and its location will be made by the government some time after these meetings.

Suppose that after the meetings a decision is made to build a dam at one of these sites? The method of communication of this decision is again important. We suggest that a format similar to that suggested earlier be followed in making this decision known to the public. The families to be affected on the dam site should be the first ones to receive this news followed by the local communities and organizations and then the general public. We believe this could be accomplished with minimum loss of time and with maximum effect if properly planned.

Families Affected



EFFECT OF THE PROPOSED DAM ON THE FAMILIES

At the present time, both of the proposed dam sites (Dam Site Six and Dam Site Seven) are being considered for construction. The dam site studies, therefore, are focused on evaluating the two sites to find which one is the most suitable for a dam and a reservoir. In the sociological studies this evaluation involves an understanding of the problems of families, individuals and groups in both areas.

Families at Site Six

The tentative plan for a dam at either site involves building a dam across the Red Deer River and a certain amount of flooding for the reservoir. This will involve flooding of certain properties and displacement and dislocation of some households within the area. Socio-economic data regarding the families who might be affected if a dam is built at Site Six are presented in this section of the report.

From a detailed County map indicating the extent of proposed reservoir boundaries, a list of property owners was initially prepared. This information was checked for accuracy using further data provided by the Project Manager. The two lists differed slightly. The final list (provided in Appendix B) was used for analysis of information. The consultants caution that there were some difficulties in obtaining this data and that our list may not be considered final for administrative purposes, e.g., compensation, etc. There may be smaller subdivisions of land not shown on county maps; hence, some owners may have been omitted.

At Site Six 25 properties will be affected by a reservoir level of 3,110 feet. Twenty-two families might be affected by this reservoir level. About 3,688 acres of

land will be affected by a reservoir level of 3,100 feet whereas at 3,110 feet, 4,230 acres will be affected. A perusal of Appendix B will indicate that several properties are owned jointly; therefore, the number of families owning the properties affected at both levels is greater than the number of properties indicated. One of the properties is owned by the Crown while another is owned by a real estate company. The effect on two properties cannot be discerned from our data. The extent of flooding at both reservoir levels is given in Table 34.

Table 34
Extent of Properties Flooded at Two Reservoir
Levels at Site 6

<u>Extent of Flooding</u> Percent	<u>Percentage of Properties Flooded at:</u>	
	Flood level of 3,100 ft. (22 Properties)	Flood Level of 3,110 ft. (25 Properties)
5 or under	18	20
6 to 20	23	24
21 to 40	14	12
41 to 60	--	4
61 to 90	23	20
91 to 100	9	8
Not known	13	12

As Table 34 indicates, some of those properties will be affected in a minor fashion whereas other owners will have to be completely displaced and rehabilitated at another location. Changes in the height of the proposed dam and the level of the reservoir will perhaps change the list of properties affected in some minor way. Also, the facilities to be developed around the reservoir boundaries, the dam, and buffer zones, etc. may involve the expropriation of additional land, further expanding

this list.

Land to be Flooded

The consultants mailed a questionnaire to property owners identified on the map. Personal interviews were also held to supplement the questionnaire. We have information from 13 of the families and it is presented here. (Four owners do not live on their properties in the immediate area and thus it was difficult to contact them.)

Thirteen owners contacted indicated that a total of 2,200 acres of their land will be flooded. The perceptions of the owners regarding the extent of flooding on their land cannot be taken at face value because of their difficulty of knowing exactly what the level of the reservoir will be.

Most of this land is under grain, hay and pasture and thus varies in economic value. Estimates on the value of the flooded land were obtained from the owners but cannot be presented here because most owners probably do not know exactly how much land will be flooded and how much land will be used additionally along the reservoir. Also, degrees of confidence in this kind of data will be low because of the problems of bias in assessing land values, particularly when it comes to assessing the value of one's own land. The only reliable and usable figure with regard to acreages used and its value would perhaps come from the Department of Environment when the exact nature of the facilities is known.

Households and Farmsteads to be Flooded

As far as the flooding of households is concerned, there are two home sites on the north side of the River which will be flooded. At present these properties belong to a mixed farmer and a bee keeper and are in the area of Dixon. The bee keeper, whose home site will be flooded by proposed Dam Site Six, also has a honey processing plant on his property which will be flooded. On the south side of the

River there is some doubt about the flooding of the home site of one farm family. It is not clear what effect a dam at Site Six will have on this residential structure. Most other residents along both sides of the River are located on high ground.

Farm Operations Disrupted and Occupational Displacement

The problems of occupational displacement and the future plans of families are difficult to assess until such time as a decision is made and exact data are available as to how that development will affect the properties and their owners. As indicated earlier, the decision-making process has actually begun, but a definite decision about plans and displacement will have to wait until more is known about the location of the dam and its exact impact on each family. At the time of field work, several factors were still unknown--for example, at which site the dam will be built, the level of the reservoir, the nature of related developments such as roads, corridors along the reservoir banks, etc. Therefore, whatever responses are reported here represent the thinking of the families during the summer of 1974 in view of available information at that stage. This was combined with some guess work on the part of respondents. This data should, therefore, be assessed in that light.

Two families on proposed Dam Site Six are quite prepared to move or find alternative occupations if their properties are flooded as long as they receive adequate compensation. In this case the south side family would live in their present home but would combine non-farm work with farming whatever portion of their land is left. The north side family's home would be flooded and this would need relocation.

Another family on the south side would like to see exactly how the developments would affect their residential

property as well as what will happen to their farmland in view of future roadway developments before they reach a definite decision. However, this family has plans for a non-farm occupation either on a part-time basis or on a full-time basis, depending on the situation. The male head of the household has the required training for a non-farm job. For another four families whose land will be flooded, but who do not live on the properties, the situation is perhaps not very difficult. Either they are already working at a non-farm occupation elsewhere or if they are farming, their residence is located at a different site.

Of the remaining families, five will not be seriously affected because the acreage of land flooded is rather small and it will not seriously disrupt their occupations or life styles. The rest of seven families, however, will experience serious disruption of their farm operations. In one case, the farmer expects half of his 800 acres of land to be flooded. His two sons had planned to stay on the farm, but the dam site proposal has upset these plans. In another case, a whole bee-keeping operation will have to be dislocated. The disruptions in the case of the other five families are also of a fairly major nature.

Length of Stay on the Present Farm

Data collected during the field work indicated that an individual's intensity of feeling towards his property seems to vary with the length of his stay on that property. Another factor that seems to affect this sentiment is whether a farm was inherited or bought by an individual. Those who inherited their properties have more attachment to it than those who bought it. Those who have owned properties for a longer period of time feel more attached because they have already put in a major part of their lives into their development. About half the present owners of proposed Dam Site Six properties live on

properties inherited from their families and for them the attachment to the land is intense and the thought of giving it up is upsetting emotionally.

Age of the Owners

Studies on relocation and displacement of farmers indicate that relocation or change of occupation after age 45 is a traumatic and difficult experience. Also, the individual perhaps pays a heavier price emotionally if he is forced to make that change as compared to a situation where he makes such a change of his own volition. About three-quarters of the owners are over 45 years old and some of them are in their middle fifties. The rest of the owner residents in this group are in their thirties.

Future Occupations in Case of Relocation

It has already been said that one of the families to be flooded is engaged in the business of bee-keeping and they have been there for about three or four years. They have about ten acres of land, a home and a honey processing facility. Though they do not own a great deal of property, the volume of their business, according to them, is fairly large. Also, they run this business on a partnership basis with another family. If they are compensated on the basis of what they own in physical assets only, they will perhaps be at a considerable disadvantage in relocation. They wish to continue bee-keeping if they are compensated in such a manner which financially enables them to re-establish elsewhere. Of the rest, three of the owner residents are involved in part-time off-farm work at present. These families indicate that they would like to continue living on their farms because they like a rural environment. They would take compensation for the property flooded and would increase the part-time component of their work. One family whose home site will be flooded would possibly build a home on the residual property and might hobby farm

along with part-time off-farm work. Another family might completely change to a non-farming occupation if their present pattern of life is disrupted by the proposed developments. In any of these cases, no training for non-farm occupations will be necessary.

The rest of the farm families would continue farming and living on their present premises. They might try to replace land lost to the dam site development from surrounding areas. They would like government help and consideration in the replacement of their lost properties.

Information about Dam Sites

The main sources of information for Dam Site Six families with regard to the proposed developments are largely secondary and tertiary sources. It is true that some of the families have interacted with the Project Management Staff and the Public Participation Staff of the Department of Environment and the Sociological Consultants, yet there are others who have had no such opportunities. Many of them are aware of the fact that they had no representation on the Public Advisory Committee of the Red Deer River Flow Regulation Studies and none of them know anybody on the Public Advisory Committee. All of them indicated a wish to get involved in the public hearings. These families indicated they would need information on the following concerns:

1. "The actual dam site--where is the dam going to be built?"
2. "How much land will be lost?"
3. "What materials will the dam be made of and where will this material come from?"
4. "What is the purpose of the dam?"
5. "What rights will I have concerning my land?"
6. "When will the dam be built?"
7. "Complete summary of all studies."
8. "How is the compensation to be paid, if so?"
9. "How much compensation?"

10. "Buffer zones--how much land will be taken up?"
11. "What about the water level?"
12. "What about drainage problems?"

This compilation of responses from the families and individuals concerned is useful because it will help the Department of Environment arrange for information that the families will need for decision making in case Site Six is chosen for the dam.

Families at Proposed Dam Site Seven

To ascertain the number of families to be directly affected, identify them, and collect relevant social data about them, the same procedure was adopted for Dam Site Seven as was used for Dam Site Six. Using a map showing probable reservoir boundaries if the dam is built at Site Seven, the quarter sections owned by different individuals were identified and a list of owners was compiled with the help of local informants. The list was checked against a similar list provided by the Department of the Environment. As in the case of Dam Site Six, there were discrepancies between the two lists for Dam Site Seven. These discrepancies had to be resolved in the preparation of a final list. This list is attached as Appendix C. This list, however, should not be taken as a final list. There are probably some inaccuracies, particularly in incorporating the owners of subdivisions smaller than the quarter sections. Also, new transactions in land sales may have to be incorporated and changes in the reservoir level could affect the composition of this list considerably.

There are a total of 59 properties which might be affected directly by flooding if a dam with a reservoir level of 3,180 feet is built at this site. The extent of loss by flooding or otherwise varies considerably between the families. Some of these families will obviously be affected

in a very minor way, while others will perhaps be completely flooded and their operation will be almost completely disrupted.

Several of the owners were contacted by the consultants personally. Some were contacted by a Field Worker employed to exchange information while others were contacted by the Project Management Staff and the Public Participation Staff of the Department of Environment. In the fall of 1974 a three-page questionnaire was mailed out to the property owners. This was followed by a telephone reminder to those who could be reached from Spruce View. Twenty-eight questionnaires were returned. Information presented here is based on these questionnaires combined with personal observations.

Of the returned questionnaires, about 55 percent had heads of the household above the age of 45 years. Twenty-five percent were between the ages of 30 and 44 and the rest were younger than 30 years. Several of these families have dependent children at home while a few others have married sons who live at home and either farm in partnership or otherwise. Over 80 percent of these heads of household said they were farming full time. Three individuals practice part-time farming (also do construction work). The majority of the farm operations were reported to be of mixed farming type (75 percent); others reported livestock raising only (14 percent); one is a dairy farmer; and in the other cases, they are either non-farmers or the land is rented out.

Land to be Flooded

Estimates of acreages to be flooded by the reservoir were obtained from the Department of the Environment. The total acreage to be affected at a 3,180 foot reservoir level is 6,315 acres. This figure would perhaps change with changes in the reservoir levels. The land acreages held by these 28 respondents varies from six acres in the

case of one individual to 1,280 acres, the largest owner. All of them except two own a quarter section or more. Also, there are several non-resident families who did not return the questionnaire and are not included here. Most of these families own acreages smaller than one quarter section.

Data obtained from the respondents regarding the acreage of land to be flooded cannot be relied upon because most of the individuals do not know exactly how much land will be flooded. However, we made an attempt to obtain such figures and the data collected from the 25 respondents show a range of from six acres to 610 acres, with a total for these 25 families of 4,700 acres. Three of the respondents did not know the extent of flooding to their land. Most of the land to be flooded is under field crops, pasture and hay. In addition, some families reported flooding of tree stands and shelter belts, etc.

The data provided by the Department of the Environment on flooding of land is presented in Table 35 below.

Table 35
Estimated Extent of Flooding of Farm
Properties at Site #7 (Reservoir
Level of 3,180 Feet)

Extent of Flooding Percent	Percent of Properties N = 59
5 and less	7
6 to 20	14
21 to 40	25
41 to 60	12
61 to 90	22
91 to 100	3
Not known	17

In addition to the actual flooding of a certain number of acres, the property owners anticipate problems on their unflooded land which will affect values and outputs. One such problem mentioned was a drainage problem resulting from the creation of the reservoir. In our opinion, the anticipated problem of drainage on farm lands if the dam is built at Site Seven needs an immediate study to properly evaluate the impact of Dam Site Seven proposals.

Home Sites to be Flooded

During our field work, we tried to obtain data on the actual number of home sites to be flooded. In assessing the exact number of home sites, the problems encountered were quite similar to the number of acres flooded, though of a lesser magnitude. Our estimates show that there will be about 15 home sites flooded by a dam built at proposed Dam Site Seven. There is some doubt about another three sites which might be flooded. In addition, there is one unoccupied site which will be flooded. Additional home sites may be affected by drainage and other problems. Also, more families than home sites may be affected because more than one family is known to reside at some sites.

The proposed reservoir at Dam Site Seven, as suggested earlier, will completely flood the present location of Raven. This will involve the loss of family residences and at least two business operations.

In the case of one family, the family burial ground will probably be within the flood levels.

Occupational Displacement and Disruption of Farm Operation

In addition to the flooding of valuable farmland, home sites, and at least one graveyard, the reservoir at proposed Dam Site Seven will create serious disruptions in the farming operations of several families. Part of their land will be flooded thus segregating the remainder into different parcels. For all 59 families (except for

a few non-farming land owners) this reservoir will create some disruption either by flooding part of the land and thus reducing the size of their operation or by making rentals impossible for those who rent land on the other side of the River. Access across the River will involve a very long and time-consuming route once the reservoir is full. Also, significant amounts of acreage will be flooded (6,315 acres according to one estimate) and other acres may be used up by development related to the dam. This will create a situation where a large number of families who need to buy or rent land to compensate for their loss of acreage will not be able to do so because of the shortage of land created by the reservoir. As a result, those families wishing to continue farming may have to move out of the area even if they are not completely flooded and their home sites are still intact. Therefore, the extent of dislocation in the case of a dam at Site Seven will be far greater than the number indicated by totally flooding all farms and home sites.

The families to be affected were asked if they would like to continue farming. Seventy percent of those who returned our questionnaire indicated that they would like to continue this occupation. Others did not want to continue because they were too old to make the adjustment or because they were non-farmers owning land. If this figure is correct, it is quite clear that there will be a number of affected farm families looking for farmland in this area. Since the number of families who might look for more land is rather large, and because there will be pressure on the land for non-agricultural uses, there are two courses of action for such families--either they sell their remaining holdings and move away from the area or if they choose to stay, they operate on a reduced farm operation which may have serious repercussions on their incomes and lifestyles. One possibility, of course, is non-farm work.

We asked them if they had any definite plans to move to a given area. Most of them had no definite plans at this stage. Some of them are strongly against moving and indicated that "they will not move" or "they had no intention of moving," or "they will have to carry us off here." Only two of the families indicated that they might move to another farm east of their present location. This is realistic thinking because the land west of the area is not as productive as it is east of Dam Site Seven

Since a majority indicated that they would like to continue farming, most of them did not want any training to go into non-farm jobs. Both in the case of Dam Site Six and Dam Site Seven, the government does not need to worry about retraining in case of relocation, according to this data.

Length of Stay on the Present Farms

As has been indicated earlier, length of stay on a farm and whether the farm has been inherited has something to do with intensity of feeling and attachment to the property and willingness to leave. The situation at Dam Site Seven is slightly different from that at Site Six in the sense that a majority of the families have lived in the area for a long time and a large number of families have inherited land from their parents. Of our respondents, 63 percent had inherited land from their parents and about 80 percent had lived on their present location for ten years or more. Because of the comparatively longer period of stay and also because of the larger number of inheritances, feelings of attachment to the land in the Dam Site Seven area are intense. The matter of inheritance and longer stay on the farms, combined with farm improvements such as improvements in drainage of land and planting of trees, further intensify these feelings of attachment. Also, the nature, shape and size of the reservoir is such that a large number of families will be disrupted. The local residents perceive that the quality of the reservoir at the Raven dam site

will not be very great. Therefore, they cannot see why so many families should be disrupted for such poor benefits to society.

Many families indicated that they had worked hard and spent a lifetime improving their land, especially in the area of drainage work. As a result, they perceive the dam as nullifying their life-long efforts in exchange for a very small perceived benefit to society. All these factors combine to produce a general feeling in the area that the benefits produced at this dam site will not outweigh the losses.

Raven River Valley is no doubt a spot of scenic beauty in the province. The Edmonton Journal of December 7, 1974 ran an article on a local art gallery which was exhibiting paintings of Raven Valley District scenes. These were done by a painter who lived and painted in the valley. Many of the respondents mentioned aesthetic aspects of natural scenery in the valley and exhibited an attachment to the area. In any development project such factors need to be given due consideration. We suggest that in the final evaluation process, the aesthetic value of the valley should receive an appropriate weighting.

Awareness of the Need for This Project

Most of the residents interviewed seemed to perceive the need for such a dam on the basis of water needed by downstream communities for industrial development. These communities included central Alberta communities with special mention of Red Deer and Drumheller. A fairly large number of individuals also perceived this need as being due to Red Deer and Drumheller's need for continued flows of water to dilute their sewage so that they would not have to establish proper sewage treatment facilities. Without being specific, need for water by "other communities" was also mentioned. We perceived that these "other communities" were perhaps communities along the proposed water pipeline.

About 16 percent of the individuals indicated that the dam is being built so that the government could sell water to the United States. In the understanding of this need there seems to be some misunderstanding among the residents. The Public Participation Staff of the Department of Environment should take this information into account in designing public participation programs.

About 25 percent of the respondents said that the society needs a development such as the one proposed, but many of them indicated that Dam Site Seven is not the appropriate place for it because it will not be able to serve the needs of the society as perceived by them. The rest (about 70 percent) indicated that there was no need for such a dam site development. It was clear during the discussion, however, that many individuals were quite cognizant of societal needs with regard to regulated flows in the Red Deer River. However, when it came to Dam Site Seven, they would say there was no need. We suspect there are several individuals in the 70 percent mentioned above who would perhaps agree with society's need to have a regulated flow if they were not to be directly affected themselves.

Public Participation

About 25 percent of our respondents knew that they were being represented on the Public Advisory Committee of the Red Deer River Flow Regulation Proposal studies. About half of them were aware of their membership in the Raven River Valley Preservation Association. All of them would like to attend public hearings. They were asked if they need more information. All of them indicated that they would like to get more information about the dam site proposals. The types of information required are detailed below. This desired information is very similar to questions raised by the respondents at Dam Site Six. These items are recorded here for the information of the Public Participation Staff.

1. "Would like to know what effect the proposed development will have on our lifestyles, farming and financial situation."

2. "Where and when the dam will be built."

3. "All we can have."

4. "Why Site Seven is being considered over Site Six."

5. "We would like to know what the government intends to do."

6. "I think we have heard most of the views."

7. "I would like to know how this would benefit this area."

8. "Exactly what is going on?"

9. "I feel that those people who are for the dam should look at what and where and to whom this dam will do to those that are to be done to (sic)."

10. "No official has ever stated where a dam will fit into an overall scheme. . . . Where does it fit in the eastern slopes conservation or where does it fit in the total Alberta scheme or, for that matter, the total water picture for North America? It appears there is none. So the whole system is not needed until it does fit into some necessary scheme. Don't know. The government has changed its reasons on every occasion they speak in public."

11. "Anything positive would help."

12. "The effect on environment, weather. As a matter of fact, I have not received any information as yet."

13. "Facts on what is going on and why can't we have a vote on this matter like everything else?"

14. "How much is the government willing to pay for an acre of flooded land?"

15. "Progress to date, specific needs for the dam. I would like more information which will help me plan my own future."

16. "The truth."

17. "Honest information. What exactly is this dam to be used for? More garbage disposal, dirty industry, or what? It almost seems that someone is trying to hide the true purpose of all that water."

VIEWS ON DISPLACEMENT AND COMPENSATION OF FAMILIES TO BE AFFECTED

The consultants were asked by the government to examine relevant factors involved in the possible dislocation of some families as a result of a decision to go ahead with the proposed dam sites. As a result, throughout our work we made inquiries and collected information on this very sensitive area of our work. Most of the information collected on this subject was gathered through indirect means and involved considerable inference and interpretation. One cannot very well ask a family questions directly related to dislocation and compensation, particularly when the nature of the decision was not yet clear. Also, there was the problem of giving impressions to the families on possible dam sites, because whenever a question on this subject was asked, the immediate reaction of the respondent naturally was: "Am I going to be flooded?"

Some of the respondents were open in discussing this matter on a clearly hypothetical basis. Others found the issue involving more emotion than reason. Whatever impressions we have been able to gain in the process of our work are given below in the form of suggestions for individuals and government agencies who may have involvement in such an activity after a definite decision has been reached. However, we wish to emphasize the tentative nature of these suggestions and would like to underline the fact that generalized suggestions have the problem of being not adequately applicable to specific situations. We hope that these suggestions will be used, keeping the above considerations in mind.

1. Our first suggestion is that each family who might be affected at either of these dam sites is a unique situation. Those involved in the compensation-relocation activity should keep this factor constantly in mind and should deal with each family on the basis of its uniqueness.

2. We also feel that if uniqueness has to be respected, the compensation-relocation process must be flexible in its application to a variety of situations. We emphasize flexibility because government procedures often tend to emphasize adherence to a generalized rule for different situations. In our opinion, rational flexibility in the application of compensation-relocation rules and regulations will minimize the negative sociological impact on families and individuals.

3. The respondents feel that compensation should be given on the basis of replacement of facilities as provided by law.

4. In addition to replacement of facilities, the individuals indicated that they should be compensated for "loss of potential." Even if the productive facilities are replaced on a "home to home" basis, movement from one place to another will involve some loss of income for some years. The income trend will possibly not be maintained because of the dislocation and movement from one place to another. Loss of potential could be worked out as compensatory income for the first few years.

5. In the compensation process, compensation may not only be paid on the basis of static assets, but the dynamic aspect of business may also be kept in mind.

6. To properly take into account the dynamic aspects of business and "loss of potential" it was indicated that a farm business management specialist would be an essential part of the compensation team.

7. Each family should not only be treated as a unique case, but compensation should be paid taking into the account the whole family and how this development affects the future of the family as a unit.

8. In the compensation process due weight may be given to the following sociological factors of the family unit:

- a. stage of family cycle,
- b. loss of sentimental value,
- c. age of the farm operator which determines future farm adjustments and progress,
- d. intangible factors, for example, the "good will" of other farmers towards the bee keeper helps him financially in his business,
- e. future family plans--in particular, how this development affects future family plans, for example, participation of sons in the business.

9. In addition to the above mentioned concerns, the residents also expressed fear of capital gains tax on the money received from the government. People feel that since their land may be expropriated involuntarily, something should be done about the income taxes.

10. In some cases the farm families both own and rent land. The combination of ownership and rental makes their land units and farm businesses fairly viable. Suppose their home land is not flooded or is partially flooded and the land they rent is flooded or separated by the reservoir. This will have serious repercussions on their farm business operations. These factors should be taken into account in considering the final compensation to be paid.

11. Questions are being raised regarding situations where a farmer's land is not flooded but as a result of the proposed reservoir, his land develops drainage problems. What kind of compensation will he receive and how will it be calculated?

12. There are some farmers along the Raven River whose land is located on both sides of the River. The flooding of the River will not only flood some of their land, but it will become very difficult for them to cultivate the land on the side of the reservoir opposite their present farmsteads. Some compensation for inconvenience and increased inputs of time in cultivating that land will have to be determined.

13. The same will apply to land which is presently rented by a farmer and conveniently cultivated by him.

However, once the reservoir is built, this land will be impossible to cultivate. This will reduce the net income of that family without directly flooding their land. Some compensation for this loss of income should be considered.

14. In the compensation-relocation process, improvements on land such as drainage work, planting of trees and conservation measures taken by the owners need to be taken into account.

Summary & Conclusions



CONCLUSIONS AND RECOMMENDATIONS

1. The population of the study area will increase.
2. Population of the study area will increase at a greater rate if development of a dam takes place.
3. Population growth will most likely take place in the cities and larger towns in the study area.
4. Resources needed for industrial development presently exist in the study area.
5. The majority of the people in the study area favor some form of industrial development.
6. Industrial development should provide jobs for the indigenous population.
7. Training programs might be needed to develop the skills of the indigenous population so that they can benefit from the proposed developments.
8. Development of a dam and industry should be of such a type as to minimize any environmental damage.
9. Consideration should be given to minimization of any possible disruptions in the "way of life" of people in the study area.
10. Cities, towns and neighborhoods in the selected dam site areas should have assistance in maintaining and development of existing and needed services.
11. Those families required to move should be compensated on an individual basis.
12. Compensation to families should take into account facts other than the market value of their property.
13. Our findings indicates that of the two alternative dam sites, Site Six would have a lesser degree of disruption upon the communities and individuals.

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APPENDIX A

LIST OF MEMBERS OF THE SOCIOLOGICAL SUB-COMMITTEE OF THE TECHNICAL ADVISORY COMMITTEE OF THE RED DEER RIVER FLOW REGULATION PROPOSALS

S.N.	Name	Institution
1	A. F. Belyea	Department of Environment
2	Park Powell	Department of Environment
3	A. McPhail	Department of Environment
4	David Anderson	Department of Environment
5	Roger Lafrancois	Department of Environment
6	R. E. Barrett	Mayor of Red Deer

APPENDIX B

LIST OF INDIVIDUALS WHOSE PROPERTIES MIGHT BE AFFECTED BY SITE #6 RESERVOIR

Name	Known Address	Percentage Land Lost		Total Acreage Lost	
		3,100 ft. Level	3,110 ft. Level	3,100 ft. Level	3,110 ft. Level
Adamson, C.W.	R.R. #1 Innisfail	35	40	315	360
Aschenbrenner, F.	R.R.#2 Innisfail	3.5	4	8	10
Buxton, J.	Bowden	--	25	--	140
Cunningham, N. and B.	R.R. #1 Innisfail	35	46	110	140
Fetch, N.	--	--	1	--	5
Fischer, Fred	--	100	100	10	10
Hendrickson, H. and C.	--	6	7	20	25
Hansen, Eric	--	91	94	430	440
Jensen, R. D. and K.	Calgary	69	81	220	260
Jorgenson, G. and G.	Olds	66	67	670	680
Kum, F. W.	R.R. #1 Innisfail	D.K.	D.K.	D.K.	D.K.
Larsen, Chris	--	1.5	1.5	5	5
Marethon Realty	Not known	89	89	80	80
McLary, R. & J.	R. R. #1 Innisfail	37	37	275	275
Michael, E. J.	R. R. #1 Innisfail	65	90	525	720
Morck, O. D.	Not known	1	2	5	10
Nagel, K. & L.	R.R. #1 Innisfail	11	13	35	40
Nimmo, J.	R.R. #1 Innisfail	--	3	--	10

APPENDIX B (Continued)

Name	Known Address	Percentage Land Lost		Total Acreage Lost	
		3,100 ft.	3,110 ft.	3,100 ft.	3,110 ft.
		Level	Level	Level	Level
Rasmussen, B.	R.R. #1 Innisfail	11	11	20	20
Sharp, J.	--	8	9	25	30
Shoo-Wong, L.	Calgary	74	78	400	420
Smith, Charles	Not known	3	16	25	30
Westegard, E. & V.	R.R. #1 Innisfail	17	17	80	80
Crown Land	--	--	--	430	440
Newsham, C.	R.R. #1 Innisfail	Rents	Rents	Rents	Rents
Thompson, H.	R.R. #1 Innisfail	Rents	Rents	Rents	Rents

APPENDIX C

LIST OF PROPERTIES WHICH MAY BE AFFECTED IF A DAM IS BUILT AT SITE SEVEN

S.N.	Name	Address
1	Armstrong, Gordon	RR #1, Innisfail
2	Buxton, Joseph	Bowden
3	Baugh, Dorothy and Ian McGilvray	Not known
4	Bertleson, Brian	RR #1, Innisfail
5	Baynham, A.W.	RR #1, Innisfail
6	Coleman, J. E.	Not known
7	Cunningham, Mr.	RR #1, Innisfail
8	Damgaard, T.	RR #1, Innisfail
9	Delves, W.	Calgary
10	Doll, Dean	RR #1, Innisfail
11	Evanson, Olive	Not known
12	Fetch, Norman	RR #1, Innisfail
13	Fleischman, Andrew	RR #1, Innisfail
14	Flavelle, Clair	Crossfield,
15	Farr, Robert	RR #1, Innisfail
16	Gylling, M.	RR #1, Innisfail
17	Gloer, William	RR #1, Innisfail
18	Gloer, Edward	RR #1, Innisfail
19	Heuven, Ben	RR #1, Bowden
20	Hindbo, Vernon	RR #1, Innisfail
21	Holmes, W.	RR #1, Innisfail
22	Heare, Stan	RR #1, Innisfail
23	Heare, Isabel	RR #1, Innisfail
24	Houseman, Thomas and Harvey	RR #1, Innisfail
25	Jensen, Norman	RR #1, Innisfail
26	Jensen, Howard (store)	RR #1, Innisfail
27	Jensen, Alver	RR #1, Innisfail
28	Knight, E. B.	Not known
29	Larsen, Aage	RR #1, Innisfail

APPENDIX C (Continued)

S.N.	Name	Address
30	Lamport, William	Balzac
31	McKain, C.	RR #1, Innisfail
32	McKain, Mike	RR #1, Innisfail
33	McKain, A.	RR #1, Innisfail
34	Miller, F. G.	RR #1, Bowden
35	Morrison, John	RR #1, Innisfail
36	Nanninga, G. and M.	Not known
37.	Nissen, John	RR #1, Innisfail
38	Nissen, C.	RR #1, Innisfail
39	Nissen, Hans	RR #1, Innisfail
40	Neaper, Glen	Stauffer
41	Norman, C.	RR #1, Innisfail
42	Olson, Robert	RR #1, Innisfail
43	Pillar, Frank	Stauffer
44	Raun, Mrs. C.	U.S.A.
45	Rogers, Shirley	RR #1, Innisfail
46	Shannon, Robert	RR #1, Innisfail
47	Shannon, Louis	RR #1, Innisfail
48	Shannon, Howard	RR #1, Innisfail
49	Shannon, Alice	RR #1, Innisfail
50	Stoyberg, Elmer	RR #1, Innisfail
51	Sheath, Robert and W. D.	Calgary
52	Sheath, Robert and G. L.	Calgary
53	Thomson, J. K.	Not known
54	Tingle, F. G.	Bowden
55	Vanner, A. E.	RR #1, Innisfail
56	Wilson, Gordon	RR #1, Innisfail
57	Wise, George	Stauffer
58	Walker, Don	RR #1, Innisfail
59	Walker, Glen	RR #1, Markerville
	Neilsen, Olf	(Renting from Olson)

APPENDIX D

NAMES OF PEOPLE WHO WILL BE AFFECTED BY THE RAVEN RIVER DAM (COMPILED BY THE RAVEN RIVER PRESERVATION ASSOCIATION). ALL OF THESE PEOPLE WILL LOSE SOME LAND UNDER WATER, POSSIBLY BUILDINGS AND POSSIBLY ACCESS TO PRESENT LAND AND/OR BUILDINGS.

Norman Fetch	Ed Gloer
Robert Fetch	Stan Heare
Carol Norman	Dean Dahl
Delia Christensen	Albert Vanner
John Nissen	Alvin Jensen
Hans Nissen	Tom Housman
Tagge Damgaard	Craig Husband
Borup Gunderson	Bob Farr
Bob Shannon	Wise
Roy Shannon	James Coleman
Louis Shannon	Eric Knight
Hans Jensen	Isabel Heare
Aage Larsen	Gordon Armstrong
Danny Larson	Keith Thomson
John Olson	Glenn Walker
Shirley Rodgers	Clare Flavelle
Don Walkey	Jim Cressman
John Morrision	Harry Cressman
Olsen Brothers	Gordon Wilson
Oluf Nielsen	Howard Shannon
Andrew	Bill McKain
Bill	Raun
Elmer	Reeves
M. Gyling	Delves
H. Jensen	Cecil McKain
W. Holmes	Allan Baynham
R. Gloer	Brian Bertelsen
Fred Miller	Buxton
Ben Heuven	Tingle

APPENDIX E
PUBLIC ADVISORY COMMITTEE

Mr. R. E. Barrett, Mayor City of Red Deer	Mr. W. J. Bagnall, Reeve County of Mountain View #17
Mr. W. H. Jackson, Chairman Red Deer Reg. Planning Comm.	Mr. H. D. Falkenbert, Unifarm, Camrose
Mr. B. Coventry, Councillor Town of Sundre	Mr. H. Lembicz Alberta Fish & Game Association
Mr. J. Duffee, Superintendent City of Drumheller	Mr. J. C. Masson, Secretary- Treasurer, County of Red Deer #23
Mr. L. M. Edgar, Reeve County of Red Deer #23	Mr. W. R. Morgan Alberta Wildlife Foundation
Mr. D. Fackre Alberta Recreation Canoe Association, Campus	Mr. G. C. Pangman Department of Municipal Affairs
Mr. O. Sheddy, Alderman City of Drumheller	Mr. E. Vair Reid Carstairs
Mr. Ray Romahetz City of Drumheller	Mr. C. J. Vanderzwan, Mayor, Town of Sundre
Mr. S. Vollmin County of Mountain View	Mr. C. L. Swain Drumheller Chamber of Commerce
Mr. Michael O'brien, President Red Deer Natural History Club	Mr. O. F. Orr, Jr. P. Eng. Association of Professional Engineers
Mr. E. Johnstone Red Deer Chamber of Commerce	Mr. K. B. Scheerschmidt County of Stettler
Mr. D. W. Walkey Raven Valley Preservation Association	Mr. A. T. McPhail Project Leader (Non-voting Member)

APPENDIX F

Dear Mr.

As consultants to the Alberta Department of the Environment we are investigating the sociological aspects of the proposed Red Deer River Flow Regulation proposal. One of the components of our study is to examine the structure and role of the Public Advisory Committee.

Your response to the questionnaire is needed. Would you please take the few minutes it would take to answer it and mail it back to me in the enclosed envelope. All of your answers are treated in strict confidence.

Thank you for your cooperation.

Sincerely,

Daryll G. Murri,
Assistant Professor
Department of Agricultural Economics
and Rural Sociology
University of Alberta
Edmonton, Alberta

APPENDIX G

PUBLIC ADVISORY COMMITTEE QUESTIONNAIRE

All material is treated in strict confidence.

Name:

Address:

Phone Number:

What is your understanding of the role of the Public Advisory Committee?

Do you feel that this role has been fulfilled? Yes ____ No ____

How were you selected as a member of the Public Advisory Committee?

Who selected you as a member of the Public Advisory Committee?

How did you feel about being selected a member of this Committee?

Have you reported to anyone or some group the matters covered at meetings you have attended or information you have received? Yes ____ No ____ If you answered yes, how and to whom did you report?

If you answered no, why?

Have you been satisfied with the activities of the Public Advisory Committee? Yes ____ No ____ Would you please explain your answer.

Would you be willing to serve upon a Public Advisory Committee again? Yes ____ No ____

In your opinion are there any other people, groups or segments of the population that were not involved in the Public Advisory Committee? Yes ____ No ____ If you answered yes, please list those not involved.

Thank you for your cooperation.

central ALBERTA region
2000

help us help you

What will living conditions be like in Central Alberta in the year 2000? More important, what form would you like the region to take over the next 25 years? There are certain actions which can be performed to bring about the type of region and living conditions which the people of Central Alberta want. But first, you — the residents — should indicate your feelings about the present area and express your desires for the future.

the need to plan

The life styles of most individuals have changed considerably in the last twenty years, due to the Province's economic growth through industrialization. These changes have caused numerous physical and social problems including:

- increased demands for leisure and recreation facilities,
- increases in air, water and soil pollution,
- the decline of the family farm,
- the growth of metropolitan centers,
- loss of small town populations

Many changes have occurred so rapidly that people are now expressing their concerns to Local and Provincial Governments about future life in Alberta. Citizens are questioning what path or course should future growth be directed to ensure that we create for ourselves living conditions in which we can ensure our physical, social and economic well-being?

Because of this the Red Deer Regional Planning Commission would like to prepare a policy document to help ensure that:

- regional growth is orderly and beneficial
- development is in the best interests of the people of the region
- citizens have a say in the future plans for the region

But, to do this, we need your help.

about you

To this end it is necessary to find out what you, the people who live in the region, feel should be the major considerations of any plan for the future, particularly **your needs and desires**, not only for your immediate locality but for the region as a whole. It is essential therefore that your views and opinions be obtained to enable the elected representatives at the Commission to have this information for the preparation of alternative regional policies, **we need your co-operation**.

To The
HOUSEHOLDER

questionnaire

Please do not mark in shaded area

1) Would you indicate which City, Town or Village your family normally shops at for the following items:

Groceries	_____	1	
Clothing	_____	2	
Automobile	_____	3	
Furniture	_____	4	
Drugs	_____	5	

2) Would you indicate whether you find the above shopping facilities to be

	Adequate	Fairly Adequate	Poor	Don't know	
Groceries	☐	☐	☐	☐	6
Clothing	☐	☐	☐	☐	7
Automobiles	☐	☐	☐	☐	8
Furniture	☐	☐	☐	☐	9
Drugs	☐	☐	☐	☐	10

FOLD ONE

3) Would you indicate which City, Town or Village your family uses for the following services

Hospital	_____	11
Doctor	_____	12
Lawyer	_____	13
Bank	_____	14

4) With respect to distance from your home, how convenient do you find the services referred to in Question 3?

	Very Convenient	Convenient	In-convenient	Don't know	
Hospital	☐	☐	☐	☐	15
Doctor	☐	☐	☐	☐	16
Lawyer	☐	☐	☐	☐	17
Bank	☐	☐	☐	☐	18

applicable would you indicate which City, Town or Village you
for the following agricultural services

Grain Elevator	_____	19
Seed/Feed Merchant	_____	20
Fertilizers	_____	21
Machinery & Implements	_____	22
Hardware	_____	23
Livestock Market	_____	24

h respect to distance how
venient do you find the
ices referred to in
estion 5

	Very Convenient	Convenient	In- convenient	Don't know	
Grain Elevator	☐	☐	☐	☐	25
Seed/Feed Merchant	☐	☐	☐	☐	26
Fertilizers	☐	☐	☐	☐	27
Machinery & Implements	☐	☐	☐	☐	28
Livestock Market	☐	☐	☐	☐	29
Hardware	☐	☐	☐	☐	30

you receive a daily or weekly newspaper(s) would you state
ich one(s)

_____	31
_____	32
_____	33

ould you state to which City, Town or Village your family normally go
the following recreational and social activities

Movies	_____	34
Arena (spectator or participants)	_____	35
Curling	_____	36
Swimming Pool	_____	37
Restaurant	_____	38
Other _____ Please specify	_____	39

9) Would you state whether
you consider the recrea-
tion and social facilities
in your area are:

	Adequate	Fairly Adequate	Inadequate	Don't know	
Movies	☐	☐	☐	☐	40
Arena	☐	☐	☐	☐	41
Curling	☐	☐	☐	☐	42
Swimming Pool	☐	☐	☐	☐	43
Restaurant	☐	☐	☐	☐	44
Other	☐	☐	☐	☐	45

10) What would be your reaction to the following conditions if they
affected the community (or nearest community) in which you
live?

	Very Favourable	Favourable	Unfavourable	Very Unfavourable	No Opinion/ Not Applicable	
the population were to double	☐	☐	☐	☐	☐	46
steady population growth	☐	☐	☐	☐	☐	47
the population were to remain stable	☐	☐	☐	☐	☐	48
the population were to decline	☐	☐	☐	☐	☐	49
a large shopping centre	☐	☐	☐	☐	☐	50
small industrial plants	☐	☐	☐	☐	☐	51
large industry employing 1000 people	☐	☐	☐	☐	☐	52
pollution prone industry	☐	☐	☐	☐	☐	53

11) One of the very important issues facing the region is the question of industrial development.

Some people say that the advantages of industrial growth include the following:

- greatly increased number of jobs and employment opportunities;
- more money from taxes on new industry to help pay for better leisure, recreational, cultural and health facilities;
- more people living in the region.

Other people say that there are disadvantages to large-scale industrial development, including the following:

- many of the desirable characteristics of present communities would be changed or lost;
- the chances of damage to the environment are increased;
- the great increase in population would make many communities too large.

In general, some people would say that we should preserve the existing ways of life and the character of our communities. On the other hand, other people reply that this would mean less industry and therefore limit the creation of new jobs and the improvement of facilities and public services.

HOW DO YOU FEEL ABOUT THIS ISSUE? Of the following statements, check the one which best fits your views.

☐ Generally speaking, I favour retaining the present character of our communities and economy. ☐

☐ Generally speaking, I favour much increased industrial development. ☐

☐ Neither of the two statements above best describe my feelings. Instead, I favour: ☐

54

55

56

12) How strongly do you feel about the statement which you have checked in the last question? Indicate the strength of your feelings on the scale below, where "0" represents no strong feelings and where "7" would indicate extremely strong feelings.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ 56

7 6 5 4 3 2 1 0
Extremely Strong Feelings Strong Feelings Relatively Mild Feelings No Strong Feelings One Way Or The Other

13) Are there any additional comments which you would like to make concerning this general issue? For example, are there any other factors which you feel should be considered?

57

14) How would you rate the following things in the community (or nearest community) where you live?

	Very Good	Good	Poor	Very Poor	Not Applicable	
shopping and service facilities	☐	☐	☐	☐	☐	58
educational facilities	☐	☐	☐	☐	☐	59
health facilities	☐	☐	☐	☐	☐	60
job opportunities for adults	☐	☐	☐	☐	☐	61
parks and playgrounds	☐	☐	☐	☐	☐	62
job opportunities for young people	☐	☐	☐	☐	☐	63
recreation facilities	☐	☐	☐	☐	☐	64
government services	☐	☐	☐	☐	☐	65
road and transportation facilities	☐	☐	☐	☐	☐	66
inter-community bus service	☐	☐	☐	☐	☐	67

15) Thinking of the facilities which were listed in question 14, which three do you feel most need improvement? (Please list in order of importance.)

1. _____ 68

2. _____ 69

3. _____ 70

- 16) Planned development could encourage the locating of major services and facilities in only a few strategically located centres. Some people feel that the **advantages** of this plan include the following:
- less duplication (and larger numbers of people served) would support greater and more inclusive shopping facilities and services;
 - greater development of health, recreational, cultural and leisure facilities in major centres;
 - would encourage the growth of these major centres with increases in jobs and population.

Other people feel that there are **disadvantages** to this idea.

- while better facilities could be provided for the region, many people would have to travel a considerable distance to use them;
- emphasis on the growth of a few major centres would contribute to the decline of population and facilities in smaller communities.

Considering the advantages and disadvantages, **HOW DO YOU FEEL ABOUT THIS ISSUE?** Check the statement which best describes your feelings on this matter.

☐	Generally speaking, I would like to see development of a few centrally located centres to serve the whole region.	☐
☐	I would like to see planned development of a full range of smaller facilities in as many communities as possible.	☐
☐	Neither of the two statements above best describe my feelings. Instead, I favour:	☐
		71
		72

17) How strongly do you feel about the statement which you have checked in the last question? Indicate the strength of your feelings.

☐	☐	☐	☐	☐	☐	☐	☐	☐	73
7	6	5	4	3	2	1	0		
Extremely Strong Feelings		Strong Feelings		Relatively Mild Feelings		No Strong Feelings One Way Or The Other			

18) Are there any additional comments which you would like to make concerning this general issue? For example, are there any particular suggestions which you feel would make the alternatives in Question 16 more acceptable?

74

19) The following statements represent the feelings of some people about the protection of our natural environment. Please indicate how you feel about these issues.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
the forested area in the foothills should be preserved for recreation, even if this means less development of mining industries	☐	☐	☐	☐	☐	75
controls should be implemented to prevent pollution of our air and water, even if this means less industrial development	☐	☐	☐	☐	☐	76
more should be done to protect the landscape from damage from coal, gravel and oil and gas operations	☐	☐	☐	☐	☐	77
arable farmland should be preserved for farming operation only	☐	☐	☐	☐	☐	78
the lake shores and river valleys should be protected from over-development, even if this limits private development	☐	☐	☐	☐	☐	79
more parks, campgrounds and public areas should be developed in our region	☐	☐	☐	☐	☐	80
action should be taken to assure the conservation of all wildlife	☐	☐	☐	☐	☐	81

20) Are there any additional comments which you feel you would like to make on the issues listed in Question 19? For example, how do you feel that these concerns should be related to any plan for the development of the region?

82

21) It is difficult to include all the concerns which you might have for the development of the region in a short questionnaire. To help us produce a good plan for development, please use the space below to comment on any issues or concerns which you have that have been omitted or not considered adequately in the previous questions.

22) At present, a considerable amount of research is being done to determine the need and feasibility of a FLOW REGULATION STRUCTURE on the RED DEER RIVER. If a dam is built somewhere on the river, upstream from the City of Red Deer, some people say some advantages would be:

- increased flow during winter months
- guaranteed water supply for Red Deer and Drumheller, and by pipeline for Innisfail, Olds, Didsbury, Carstairs and Bowden
- increased oxygen levels in the river, thereby improving fish capabilities
- more water for economic and industrial expansion
- erosion control and some flood abatement
- improve recreation potential through the creation of a reservoir

Some people say some disadvantages would be:

- terminate the natural state of the river, which hinders natural or "wild river" experiences
- the reservoir would flood some farm and wildlife land
- would allow more industrial expansion in the region

How do you feel about this possible project?

- ☐ Generally speaking, I favour the construction of a dam on the Red Deer River. 84
- ☐ Generally speaking, I am opposed to the construction of a dam on the Red Deer River. 85
- ☐ Neither of the above adequately express my feelings. Instead, I favour:

23) How strongly do you feel about the statement you have checked in the last question. Indicate the strength of your feelings.

☐
7
Extremely
Strong
Feelings

☐
6
Strong
Feelings

☐
5
Relatively
Mild
Feelings

☐
4

☐
3

☐
2

☐
1

☐
0
No Strong
Feelings
One Way Or
The Other

The last few questions provide information which will enable us to understand the people who live in the region and who have completed the survey form. Would you please therefore answer the following questions.

24) Age

Under 20	20-34	35-54	55-64	65 and over	90
☐	☐	☐	☐	☐	☐

25) Sex

Male	Female	90
☐	☐	☐

26) Employment of head of household

_____ 91 ☐

27) Please indicate the City, Town, Village in which you live or state township/range if applicable

City, Town, Village _____ 92

Township _____ Range _____ Meridian _____ ☐

28) How long have you lived at your present address?

Less than 1 year	1 to 5 years	6 to 10 years	Over 10 years	93
☐	☐	☐	☐	☐

29) If less than five years would you state your previous place of residence

_____ 94 ☐

30) Would you state where the head of the household is employed

Same place as Question 27 YES ☐ 95

or City, Town or Village _____ ☐

or Township _____ Range _____ Meridian _____ ☐

31) How many licenced vehicles are normally kept at this address

Cars and Pickups _____ 96 ☐

Trucks _____ 97 ☐

about us and the region

The Red Deer Regional Planning Commission was established in 1952, and has grown over the last 20 years until today the total membership is 39 urban and rural municipalities as shown on the maps. The region covers 13,400 square miles and contains many types of land uses and landforms. It is an area with a great potential for the future.

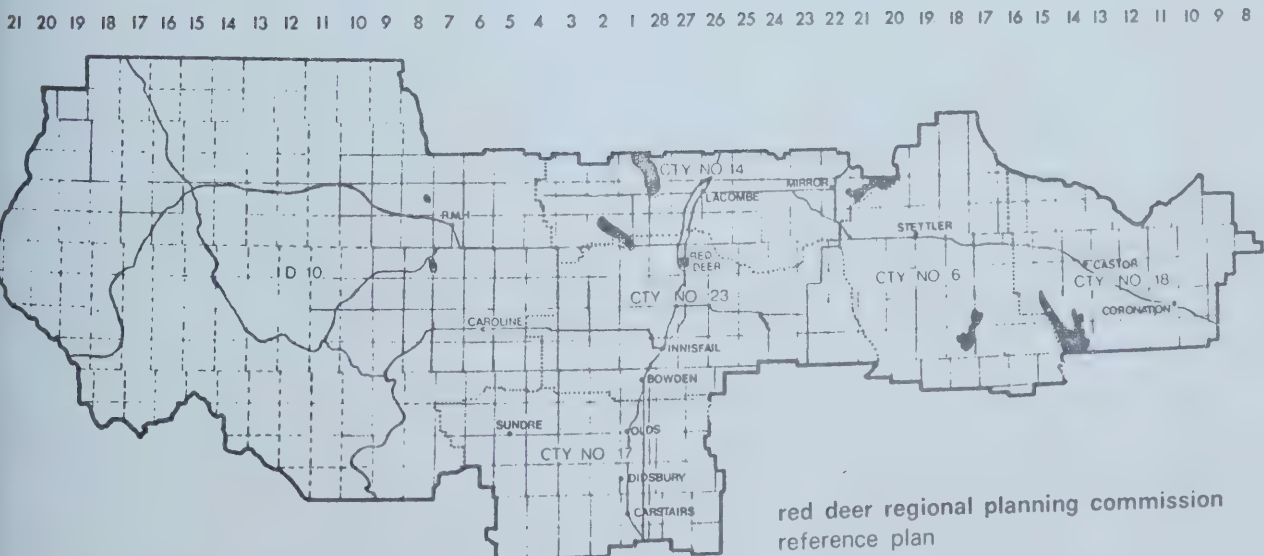
It is the home for 100,000 people. Their livelihood is derived from many different occupations, ranging from agriculture and oil production to urban services. It is an area where children are educated and where thousands enjoy the benefits of our streams, lakes woodlands and wildlife.

It is the area in which you live and in which we are asking you to help us plan for a better future.

The main functions of the Commission are divided into four:

- the preparation of a Regional Plan;
- to advise the Council of any municipality on development;
- approval authority for subdivision applications;
- responsibility to promote public interest in the proper planning of the area by encouraging active participation in the well-being of their communities by the people who live, work and play there.

We thank you sincerely for your interest in your community and region (and for your returned questionnaire). Results of the survey will be published in local newspapers and relayed to your local Council.



E.C.A. INFORMATION CENTERS

BLACKFALDS

Village Office,
BLACKFALDS, Alberta.
895-4677

BOWDEN

Bowden Public Library,
BOWDEN, Alberta.
224-3882

CALGARY

Environmental Design Area,
Original Library Bldg.,
Univ. of Calgary Library,
Univ. of Calgary,
CALGARY, Alberta.
284-6826

Calgary Regional
Planning Commission
339 - 58 Avenue S.E.,
CALGARY, Alberta.
Attention: Library
452-8147

Bureau of Public Affairs,
J.J. Bowlen Building,
620 - 7th Avenue S.W.,
CALGARY, Alberta.
268-8511

Resource Centre Office,
Faculty of Environmental
Design,

Earth Sciences Bldg.,
Univ. of Calgary,
CALGARY, Alberta.
284-6815

Calgary Public Library,
616 McLeod Trail, S.W.,
CALGARY, Alberta.
268-5271

COTTONWOOD

INNISFAIL, Alberta.
227-2493

DELBURNE

Village Office,
Village of Delburne,
DELBURNE, Alberta.
749-3606

DRUMHELLER

Box 1599,
DRUMHELLER, Alberta.
823-5382

EDMONTON

Univ. of Alberta
Extension Library,
On Campus,
EDMONTON, Alberta.
432-3280

Edmonton Regional
Planning Commission,
602, 10025 - 106 Street,
EDMONTON, Alberta.
423-3111

Book Purchase Division,
Edmonton Public Library,
Sir Winston Churchill Square,
102 Ave. and 100 Street,
EDMONTON, Alberta.
429-5351

Documents Reference
Librarian,
Documents Section,
Legislature Library,
216 Legislature Building,
EDMONTON, Alberta.
427-2473

Univ. of Alberta
Science Library,
On Campus,
EDMONTON, Alberta.
432-3785

INNISFAIL

Innisfail Public Library,
INNISFAIL, Alberta.
227-3032

Town Manager,
Town Office,
INNISFAIL, Alberta.
227-3376

OLDS

Olds Agricultural School,
Library,
Olds College,
OLDS, Alberta.
226-3311

Olds Municipal Library,
OLDS, Alberta.
226-6460

RED DEER

Red Deer Public Library,
4818 - 49 Street,

RED DEER, Alberta.
346-4576

Red Deer Regional
Planning Com.,
4910 - 59 Street,
RED DEER, Alberta.
346-3394

Red Deer College Library,
RED DEER, Alberta.
346-6459
Agricultural Building,
RED DEER, Alberta.
343-5310

ROCKY MTN. HOUSE

I.O.D.E. Public
Memorial Library,
Town Office,
ROCKY MTN. HOUSE,
Alberta.
845-2110

LACOMBE

Parkand Regional Library,
Box 1000,
LACOMBE, Alberta.
782-3850
Lacombe Public Library,
LACOMBE, Alberta.
782-3433

STETTLER

Stettler Municipal Library,
P.O. Box 1512,
STETTLER, Alberta.
742-3207

SPRUCE VIEW

Manager,
Spruce View Co-op,
SPRUCE VIEW, Alberta.
728-3209

Room 3,
Stop in Cafe and Motel,
SPRUCE VIEW, Alberta.
728-3508

SUNDRE

Secretary,
Town Office,
SUNDRE, Alberta.
638-3551



No.5 SOCIAL IMPACT

For further information contact:

Alberta

ENVIRONMENT

4747 - ROSS STREET
RED DEER, ALBERTA.
PHONE 343-5312

**Red Deer River Flow
Regulation Planning Study**

SUMMARY REPORT

1975

The proposed Red Deer River dam would affect not only the river, but also people. Consequently the Department of the Environment commissioned two sociologists from the University of Alberta, Dhara Gill and Darryl Murri, to determine the "sociological impact" such a dam would have. The sociological impact study sought to determine what social impact the dam would have on residents of the area, including loss of farmland and compensation farmers believe they should receive.

The study area, with a population of about 120,000 includes four counties, two municipal districts and parts of two improvement districts; all of them positioned along the river from the foothills downstream to Drumheller. Within this study area, the majority of residents are employed in agricultural and other primary and processing occupations.

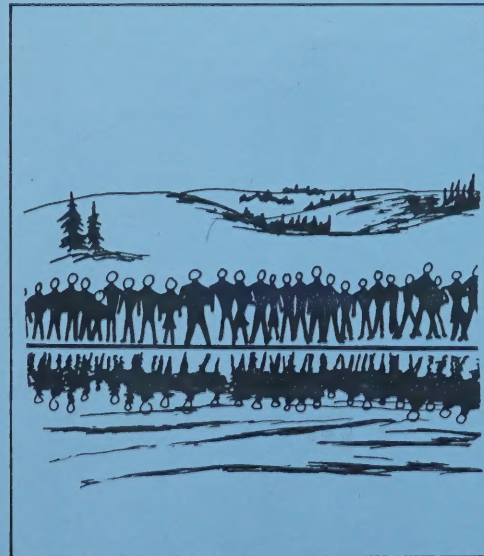
The construction of a dam on the Red Deer River would affect the population and the economic development of the area. While specific changes would occur in the immediate area of the dam, the overall effects on the Red Deer River basin would be the same regardless of which site was selected.

Population projections for the River Basin area indicated that the area will experience growth, however, the growth rate will be greater if a dam is constructed. The majority of the people in the study area, favor some form of industrial development but are also concerned about preservation of their life style. The study recommends that consideration should be given to minimization of any possible disruption in the "way of life" of the people in the area.

The potential industrial development of

the area was examined and it was found that the area has many resources which would make it attractive for industrial development. Job opportunities and better services provided through industrialization are viewed by the residents as major factors associated with the construction of a dam. Training programs should be developed to improve, where required, the skills of the local people so that they can benefit from the proposed developments.

There is no doubt that there is now a more general awareness of the implications of the proposal in the area and that the residents have been stimulated into considering its pros and cons. More open communication between government and local residents would facilitate the process. The sociological impact study recommends that information and decisions about the proposal, including dissemination of study reports, should be provided to



neighborhoods, communities and the general public in that order.

Gill and Murri state that twenty-two properties would be affected by a reservoir at Site #6, some of them to a minimum degree while others would have buildings that would have to be moved. Three home sites would be flooded. The reaction to the reservoir proposal among these families varies with the amount of damage they will suffer, their attachment to the land, the age, and other factors. They all would like more specific information about the damages they will suffer and how they will be compensated.

About fifty-nine properties would be affected by a reservoir at Site #7. At least fifteen home sites and the village of Raven would be flooded. Some farm operations would be split by the reservoir and other similar disruptions would occur. Most residents believe the losses they would suffer would outweigh any benefits. Some of the residents have misconceptions about the objectives of the reservoir and they would all like more authoritative information about the reasons for the dam and why damsite #7 is being considered.

The study recommends that the families who are required to move should be compensated on an individual basis, taking into account factors other than just the market value of their property. It is also recommended that cities, towns, and neighborhoods in the selected damsite areas should have assistance in maintaining and developing existing and needed services.

Gill and Murri conclude that damsite #6 would be less disruptive to both communities and individuals.